

Access DB# 158253

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: MOLLY CEPERLEY Examiner #: 59957 Date: 07/05/05
Art Unit: 164 Phone Number 302-0813 Serial Number: 10/682,684
Mail Box and Bldg/Room Location: Rem 3A51 Results Format Preferred (circle): PAPER DISK E-MAIL
↳ Rem 3C70

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

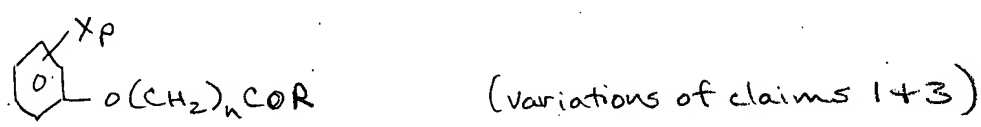
Inventors (please provide full names): _____

Bibliographic
data sheet
attached.

Earliest Priority Filing Date: 03/27/03

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

① Please search for the following fragment/compound.



X = Br, Cl, F, I
p = 1-5
n = 1-10
R = OH or NH- (NH- is a fragment: leave one valency open on nitrogen to include Z of claim 3)

② Please search for ① in combination with each of the following terms:

- antigen?
hapten?
immuno?
antibod?
tracer
- dioxin (see terms on page 1 of specification attached)
radioimmunoassay (RIA)
enzyme immunoassay (EIA)
fluorescence immunoassay (FIA)
BSA (bovine serum albumin)
OVA (ovalbumin)
KLH (Keyhole limpet hemocyanin)
- } immunogenic carriers

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*Considered
08/02/05
MTC*

=> d his ful

(FILE 'REGISTRY' ENTERED AT 18:32:47 ON 27 JUL 2005)

L1 STR
 L2 50 SEA SSS SAM L1
 L3 56697 SEA SSS FUL L1
 L4 STR L1
 L5 29874 SEA SUB=L3 SSS FUL L4
 L6 103 SEA ABB=ON PLU=ON BOVINE SERUM ALBUMIN?/CN OR OVALBUMIN? OR
 KEYHOLE LIMPET HEMOCYANIN?/CN

FILE 'HCAPLUS' ENTERED AT 19:00:15 ON 27 JUL 2005

L7 24687 SEA ABB=ON PLU=ON L5
 L8 55623 SEA ABB=ON PLU=ON L6 OR BOVINE(W) SERUM(W) ALBUMIN? OR
 OVALBUMIN? OR KEYHOLE(W) LIMPET(W) HEMOCYANIN? OR BSA OR OVA
 OR KLH
 L9 214 SEA ABB=ON PLU=ON L7 (L) (ANTIGEN? OR HAPTEN? OR IMMUNO? OR
 ANTIBOD? OR TRACER? OR RIA OR EIA OR FIA OR L8)
 L10 191 SEA ABB=ON PLU=ON L9 AND PD=<MARCH 27, 2003
 L11 2 SEA ABB=ON PLU=ON L7 AND (ANTIGEN? AND HAPTEN? AND IMMUNO?
 AND ANTIBOD? AND TRACER?) AND (RIA OR EIA OR FIA OR L8)
 L12 2 SEA ABB=ON PLU=ON L11 AND L10
 L13 80 SEA ABB=ON PLU=ON L7 AND (ANTIGEN? OR HAPTEN? OR IMMUNO? OR
 ANTIBOD? OR TRACER?) AND (RIA OR EIA OR FIA OR L8 OR RADIOIMMUN
 OASS? OR (FLUORESCEN? OR ENZYME) (W) IMMUNOASS?)
 L14 54 SEA ABB=ON PLU=ON L13 AND L10
 L15 54 SEA ABB=ON PLU=ON L12 OR L14

FILE 'REGISTRY' ENTERED AT 19:11:35 ON 27 JUL 2005

L16 103051 SEA ABB=ON PLU=ON DIOXIN OR DIOXINS
 L17 16824 SEA ABB=ON PLU=ON PCDD OR DIBENZODIOXIN OR PCFR OR DIBENZOFUR
 AN
 L18 400706 SEA ABB=ON PLU=ON BIPHENYL/BI
 L20 65874 SEA ABB=ON PLU=ON L18 AND CHLORO?

FILE 'HCAPLUS' ENTERED AT 19:24:46 ON 27 JUL 2005

L21 90073 SEA ABB=ON PLU=ON L16 OR DIOXIN
 L22 29704 SEA ABB=ON PLU=ON L17 OR PCDD OR DIBENZODIOXIN OR PCFR OR
 DIBENZOFURAN
 L23 54215 SEA ABB=ON PLU=ON L20 OR BIPHENYL(5A) POLYCHLORIN? OR PCB
 L26 4 SEA ABB=ON PLU=ON L15 AND (L21 OR L22 OR L23)
 D STAT QUE
 D IBIB ABS HITSTR L26 1-4
 L27 50 SEA ABB=ON PLU=ON L15 NOT L26
 D STAT QUE L27
 D IBIB ABS HITSTR L27 1-50

FILE HCAPLUS

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FILE COVERS 1907 - 27 Jul 2005 VOL 143 ISS 5
FILE LAST UPDATED: 26 Jul 2005 (20050726/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate
substance identification.

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 26 JUL 2005 HIGHEST RN 857144-48-0
DICTIONARY FILE UPDATES: 26 JUL 2005 HIGHEST RN 857144-48-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when
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*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005. A new display format, IDERL, is now      *
* available and contains the CA role and document type information.  *
*
*****
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Structure search iteration limits have been increased. See HELP SLIMITS
for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

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=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 19:24:46 ON 27 JUL 2005
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L7 24687 SEA FILE=HCAPLUS ABB=ON PLU=ON L5
 L8 55623 SEA FILE=HCAPLUS ABB=ON PLU=ON L6 OR BOVINE(W) SERUM(W)
 ALBUMIN? OR OVALBUMIN? OR KEYHOLE(W) LIMPET(W) HEMOCYANIN? OR
 BSA OR OVA OR KLH
 L9 214 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 (L) (ANTIGEN? OR HAPTEN?
 OR IMMUNO? OR ANTIBOD? OR TRACER? OR RIA OR EIA OR FIA OR L8)
 L10 191 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND PD=<MARCH 27, 2003
 L11 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND (ANTIGEN? AND HAPTEN?
 AND IMMUNO? AND ANTIBOD? AND TRACER?) AND (RIA OR EIA OR FIA
 OR L8)
 L12 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 AND L10
 L13 80 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND (ANTIGEN? OR HAPTEN?
 OR IMMUNO? OR ANTIBOD? OR TRACER?) AND (RIA OR EIA OR FIA OR
 L8 OR RADIOIMMUNOASS? OR (FLUORESCEN? OR ENZYME) (W) IMMUNOASS?)
 L14 54 SEA FILE=HCAPLUS ABB=ON PLU=ON L13 AND L10
 L15 54 SEA FILE=HCAPLUS ABB=ON PLU=ON L12 OR L14
 L16 103051 SEA FILE=REGISTRY ABB=ON PLU=ON DIOXIN OR DIOXINS
 L17 16824 SEA FILE=REGISTRY ABB=ON PLU=ON PCDD OR DIBENZODIOXIN OR
 PCFR OR DIBENZOFURAN
 L18 400706 SEA FILE=REGISTRY ABB=ON PLU=ON BIPHENYL/BI
 L20 65874 SEA FILE=REGISTRY ABB=ON PLU=ON L18 AND CHLORO?
 L21 90073 SEA FILE=HCAPLUS ABB=ON PLU=ON L16 OR DIOXIN
 L22 29704 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 OR PCDD OR DIBENZODIOXIN
 OR PCFR OR DIBENZOFURAN
 L23 54215 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 OR BIPHENYL(5A) POLYCHLORIN
 ? OR PCB
 L26 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 AND (L21 OR L22 OR L23)

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=> d ibib abs hitstr l26 1-4

L26 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:514725 HCAPLUS
 DOCUMENT NUMBER: 137:77886
 TITLE: Preparation of monoclonal **antibody** for
immunoassay of organic halogen compounds
 INVENTOR(S): Omura, Masashi; Tanba, Toshihiro
 PATENT ASSIGNEE(S): Fujirebio, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002195999	A2	20020710	JP 2000-397057	20001227 <--
PRIORITY APPLN. INFO.:			JP 2000-397057	20001227
OTHER SOURCE(S): MARPAT 137:77886				
AB Monoclonal antibody is obtained by using immunogen comprising 6-(3,4-difluorophenoxy)hexanoic acid and bovine serum albumin . The monoclonal antibody is used in an immunoassay or enzyme immunoassay test kit for determination of derivs. of PCB and dioxin .				
IT 19408-74-3, 1,2,3,7,8,9-HxCDD 31508-00-6, PCB 118 32598-13-3, PCB 77 32598-14-4,				

FILE COVERS 1907 - 27 Jul 2005 VOL 143 ISS 5
 FILE LAST UPDATED: 26 Jul 2005 (20050726/ED)

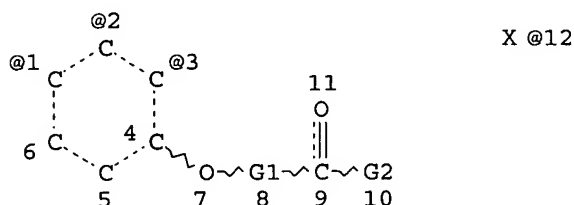
New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate
 substance identification.

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L1 STR



REP G1=(1-10) CH2

VAR G2=OH/NH

VPA 12-1/2/3 U

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

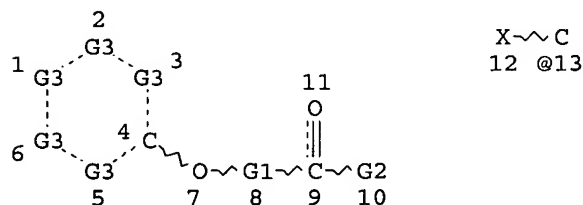
RSPEC I

NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

L3 56697 SEA FILE=REGISTRY SSS FUL L1

L4 STR



REP G1=(1-10) CH2

VAR G2=OH/NH

VAR G3=CH/13

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 13

STEREO ATTRIBUTES: NONE

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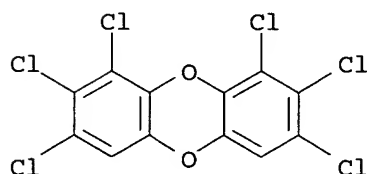
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 OVALBUMIN? OR KEYHOLE LIMPET HEMOCYANIN?/CN

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 , PCB 128 38380-08-4, PCB 156
 39227-28-6, 1,2,3,4,7,8-HxCDD 39635-31-9, PCB
 189 40321-76-4, 1,2,3,7,8-PnCDD 51207-31-9,
 2,3,7,8-TCDF 52663-72-6, PCB 167 57117-31-4,
 2,3,4,7,8-PeCDF 57117-44-9, 1,2,3,6,7,8-HxCDF 57653-85-7
 , 1,2,3,6,7,8-HxCDD 60851-34-5, 2,3,4,6,7,8-HxCDF
 65510-44-3, PCB 123 69782-90-7, PCB
 157 70362-50-4, PCB 81 70648-26-9,
 1,2,3,4,7,8-HxCDF 72918-21-9, 1,2,3,7,8,9-HxCDF
 74472-37-0, PCB 114

RL: ANT (Analyte); ANST (Analytical study)
 (preparation of monoclonal **antibody** for **immunoassay** of
 organic halogen compds.)

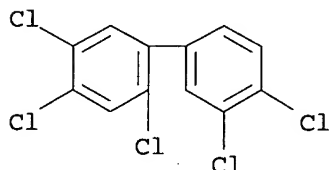
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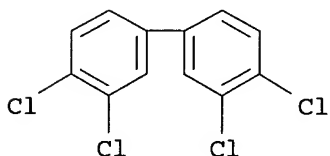
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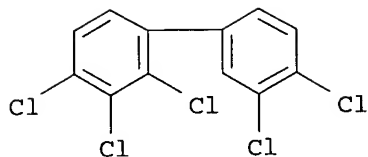
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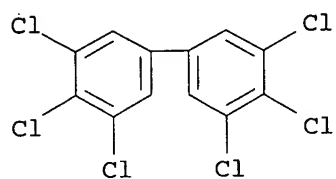


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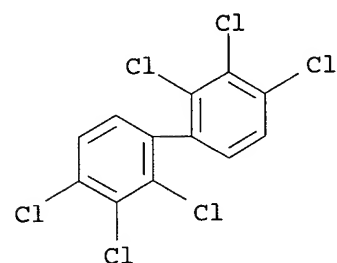
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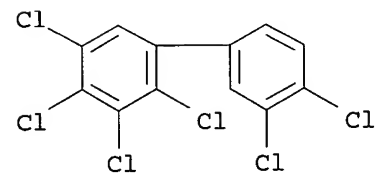
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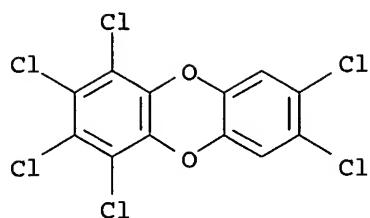
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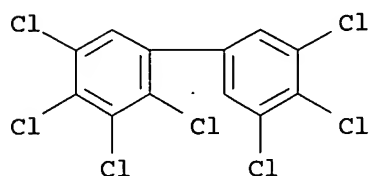
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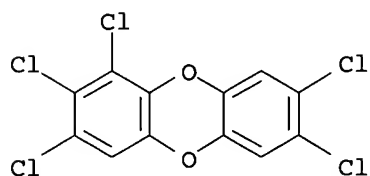
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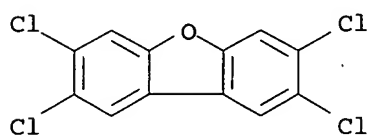
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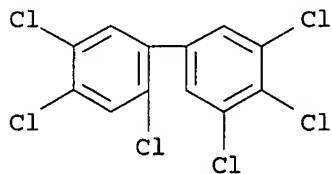
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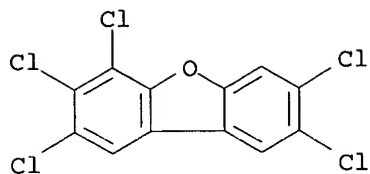
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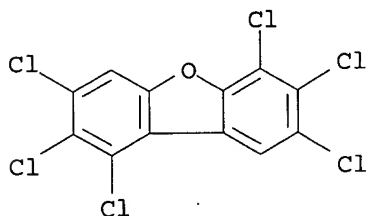
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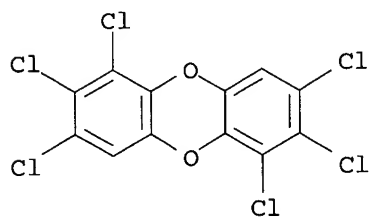
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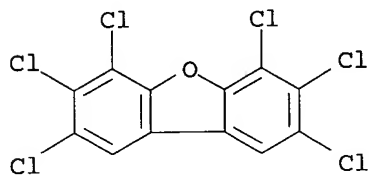
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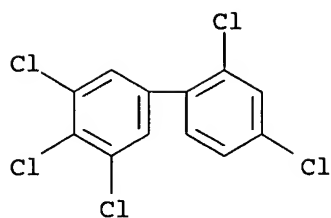
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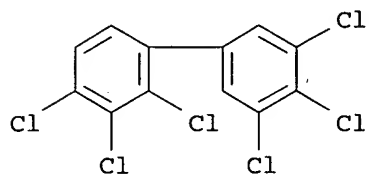
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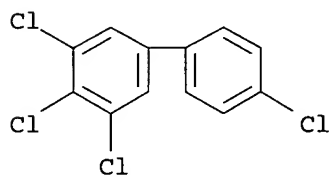
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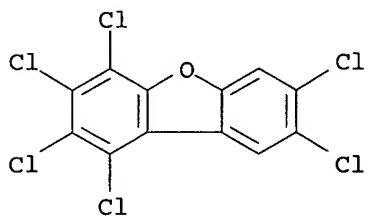
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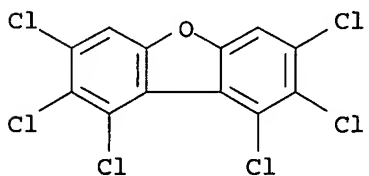
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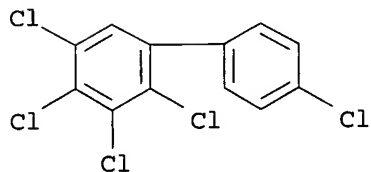
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RN 72918-21-9 HCAPLUS
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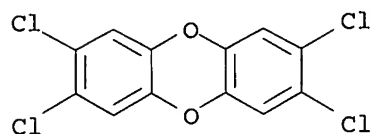


RN 74472-37-0 HCAPLUS
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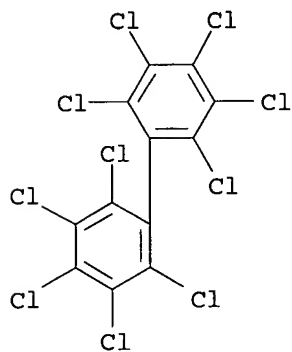


IT 1746-01-6D, Dioxin, derivs. 2051-24-3D,
 Perchlorobiphenyl, derivs.
 RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical
 study); BIOL (Biological study)
 (preparation of monoclonal antibody for immunoassay of
 organic halogen compds.)

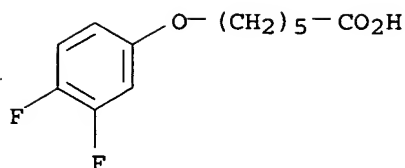
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RN 2051-24-3 HCAPLUS
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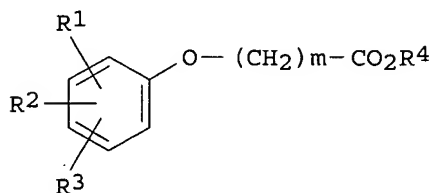


IT 440350-21-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation of monoclonal antibody for immunoassay of
 organic halogen compds.)
 RN 440350-21-0 HCAPLUS
 CN Hexanoic acid, 6-(3,4-difluorophenoxy)- (9CI) (CA INDEX NAME)



L26 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:513071 HCAPLUS
 DOCUMENT NUMBER: 137:78766
 TITLE: Preparation of substituted phenoxyalkanecarboxylic acids for determination of PCB by easy quick high-sensitivity low-cost EIA
 INVENTOR(S): Kobayashi, Hisako; Tanba, Toshihiro
 PATENT ASSIGNEE(S): Fujirebio, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002193878	A2	20020710	JP 2000-394443	20001226 <--
PRIORITY APPLN. INFO.:			JP 2000-394443	20001226
OTHER SOURCE(S):	MARPAT 137:78766			
GI				

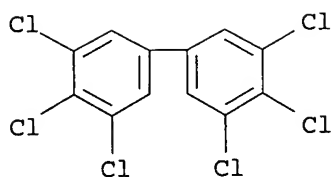


I

AB Title compds. I (R1, R2 = F, Br, CF3; R3 = H, F, Br, CF3; R4 = alkyl, aryl, H, succinimidyl; m = 5-7) are prepared Thus, 6-(3,4-difluorophenoxy)hexanoic acid was treated with N-hydroxysuccinimide and bound to **bovine serum albumin** and carboxyl particles. PCB 169 was determined by EIA using the particles and alkali phosphatase-labeled PCB 169 antibodies.

IT 32774-16-6, PCB 169
 RL: ANT (Analyte); ANST (Analytical study)
 (preparation of substituted phenoxyalkanecarboxylic acids for determination of PCB by EIA)

RN 32774-16-6 HCAPLUS
 CN 1,1'-Biphenyl, 3,3',4,4',5,5'-hexachloro- (9CI) (CA INDEX NAME)



IT 440350-21-0P 440350-27-6P 440350-33-4P
440350-39-0P 440350-45-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)

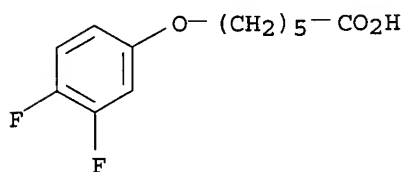
(preparation of substituted phenoxyalkanecarboxylic acids for determination

of

PCB by EIA)

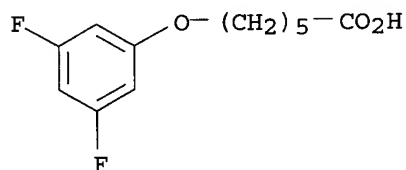
RN 440350-21-0 HCAPLUS

CN Hexanoic acid, 6-(3,4-difluorophenoxy)- (9CI) (CA INDEX NAME)



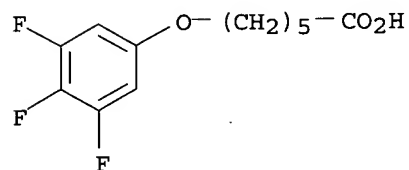
RN 440350-27-6 HCAPLUS

CN Hexanoic acid, 6-(3,5-difluorophenoxy)- (9CI) (CA INDEX NAME)



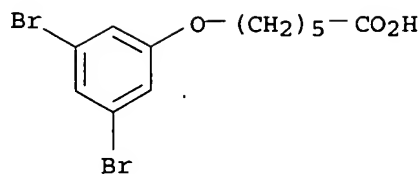
RN 440350-33-4 HCAPLUS

CN Hexanoic acid, 6-(3,4,5-trifluorophenoxy)- (9CI) (CA INDEX NAME)

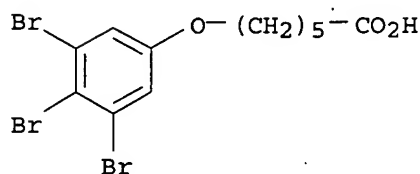


RN 440350-39-0 HCAPLUS

CN Hexanoic acid, 6-(3,5-dibromophenoxy)- (9CI) (CA INDEX NAME)

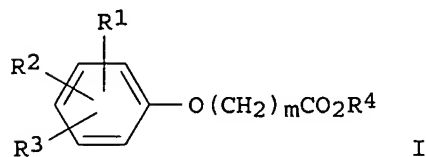


RN 440350-45-8 HCAPLUS
 CN Hexanoic acid, 6-(3,4,5-tribromophenoxy)- (9CI) (CA INDEX NAME)



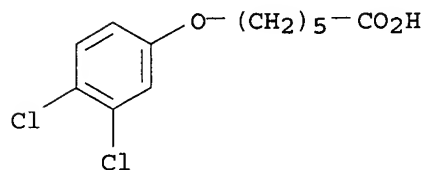
L26 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:344900 HCAPLUS
 DOCUMENT NUMBER: 136:340489
 TITLE: Preparation of phenoxyalkanoic acids for PCB
 enzyme immunoassay
 INVENTOR(S): Tanba, Toshihiro; Kobayashi, Hisako
 PATENT ASSIGNEE(S): Fujirebio, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002128731	A2	20020509	JP 2000-325513	20001025 <--
PRIORITY APPLN. INFO.:			JP 2000-325513	20001025
OTHER SOURCE(S):	MARPAT 136:340489			
GI				

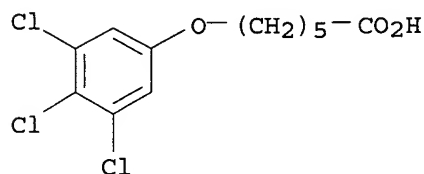


AB Title compds. I (R1 = Cl, Ph; R2, R3 = H, Cl; R4 = alkyl, aryl, H, succinimidyl; m = 5-7) are prepared 6-(4-Phenylphenoxy)hexanoic acid was reacted with N-hydroxysuccinimide in the presence of 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride in CH2Cl2 at room temperature for 2 h to give 72.6% N-succinimidyl 6-(4-phenoxy)hexanoate showing high sensitivity in an enzyme assay.

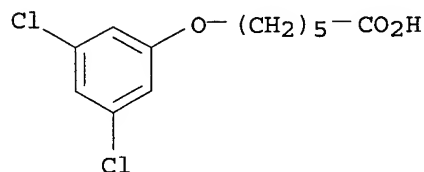
IT 87411-45-8P, 6-(3,4-Dichlorophenoxy)hexanoic acid
 415915-32-1P, 6-(3,4,5-Trichlorophenoxy)hexanoic acid
 415915-37-6P, 6-(3,5-Dichlorophenoxy)hexanoic acid
 RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (preparation of phenoxyalkanoic acids for **PCB enzyme immunoassay**)
 RN 87411-45-8 HCAPLUS
 CN Hexanoic acid, 6-(3,4-dichlorophenoxy)- (6CI, 9CI) (CA INDEX NAME)



RN 415915-32-1 HCAPLUS
 CN Hexanoic acid, 6-(3,4,5-trichlorophenoxy)- (9CI) (CA INDEX NAME)



RN 415915-37-6 HCAPLUS
 CN Hexanoic acid, 6-(3,5-dichlorophenoxy)- (9CI) (CA INDEX NAME)



L26 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1995:836028 HCAPLUS
 DOCUMENT NUMBER: 123:220376
 TITLE: A Monoclonal **Immunoassay** for the Coplanar **Polychlorinated Biphenyls**
 AUTHOR(S): Chiu, Ya-Wen; Carlson, Robert E.; Marcus, Karen L.; Karu, Alexander E.
 CORPORATE SOURCE: College of Natural Resources, University of California, Berkeley, Albany, CA, 94706, USA
 SOURCE: Analytical Chemistry (1995), 67(21), 3829-39
 CODEN: ANCHAM; ISSN: 0003-2700
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Three of the least abundant of the 209 **PCB** isomers (congeners)

are the most toxic and most difficult to quantify. These are 3,4,3',4'-tetrachlorobiphenyl, 3,4,3',4',5'-pentachlorobiphenyl, and 3,4,5,3',4',5'-hexachlorobiphenyl (IUPAC Number 77, 126, and 169, resp.). An immunizing **hapten** was designed to retain the 3,4,3',4'-chlorine-substitution pattern and coplanarity characteristic of these toxic congeners. The optimal competitors for **immunoassay** were weaker binding distinctive single-ring fragments of the PCBs. A monoclonal **antibody** designated S2B1 was derived and used in direct (**antibody-capture**) competitive **enzyme immunoassays (EIAs)**. The **EIAs** are highly specific for nonortho-substituted congeners and do not recognize the more prevalent but much less toxic noncoplanar **PCB** congeners or 2,3,7,8-tetrachlorodibenzo-p-dioxin, 2,3,7,8-tetrachlorodibenzofuran, or dichlorobenzenes. **Hapten** and competitor design for this assay suggests a basis for development of sensitive **EIAs** for other classes of **PCB** congeners.

IT 32598-13-3, PCB 77 32774-16-6, PCB

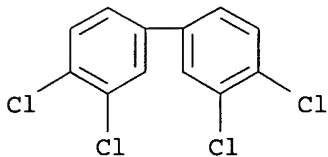
169 57465-28-8, PCB 126

RL: ANT (Analyte); ANST (Analytical study)

(monoclonal **immunoassay** for coplanar **polychlorinated biphenyls**)

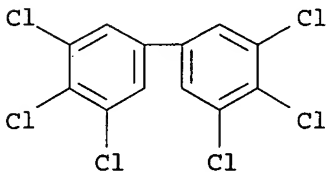
RN 32598-13-3 HCAPLUS

CN 1,1'-Biphenyl, 3,3',4,4'-tetrachloro- (9CI) (CA INDEX NAME)



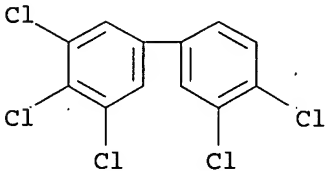
RN 32774-16-6 HCAPLUS

CN 1,1'-Biphenyl, 3,3',4,4',5,5'-hexachloro- (9CI) (CA INDEX NAME)



RN 57465-28-8 HCAPLUS

CN 1,1'-Biphenyl, 3,3',4,4',5-pentachloro- (9CI) (CA INDEX NAME)



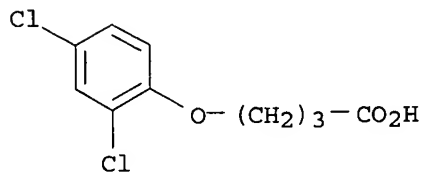
IT 94-82-6 3307-37-7

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(monoclonal **immunoassay** for coplanar **polychlorinated biphenyls**)

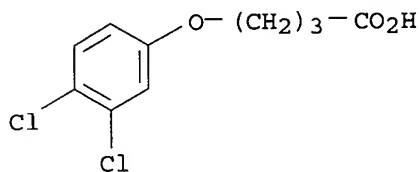
RN 94-82-6 HCAPLUS

CN Butanoic acid, 4-(2,4-dichlorophenoxy)- (9CI) (CA INDEX NAME)



RN 3307-37-7 HCAPLUS

CN Butanoic acid, 4-(3,4-dichlorophenoxy)- (9CI) (CA INDEX NAME)



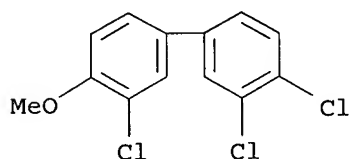
IT 124882-73-1P 168135-62-4P 168135-63-5P

RL: BYP (Byproduct); PREP (Preparation)

(monoclonal **immunoassay** for coplanar **polychlorinated biphenyls**)

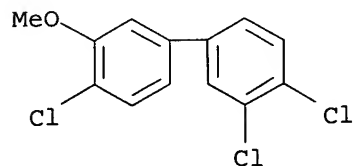
RN 124882-73-1 HCAPLUS

CN 1,1'-Biphenyl, 3,3',4-trichloro-4'-methoxy- (9CI) (CA INDEX NAME)



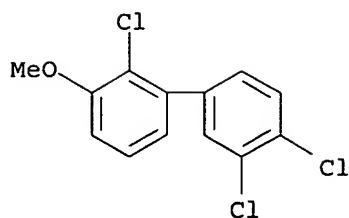
RN 168135-62-4 HCAPLUS

CN 1,1'-Biphenyl, 3,4,4'-trichloro-3'-methoxy- (9CI) (CA INDEX NAME)

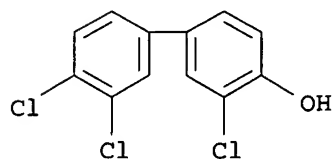


RN 168135-63-5 HCAPLUS

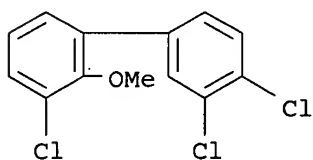
CN 1,1'-Biphenyl, 2,3',4'-trichloro-3-methoxy- (9CI) (CA INDEX NAME)



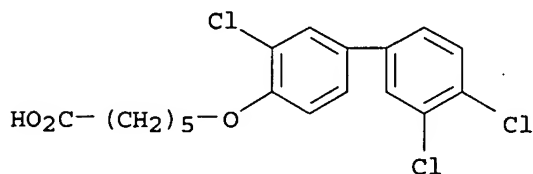
IT 124882-64-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and alkylation)
 RN 124882-64-0 HCAPLUS
 CN [1,1'-Biphenyl]-4-ol, 3,3',4'-trichloro- (9CI) (CA INDEX NAME)



IT 124882-72-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and demethylation)
 RN 124882-72-0 HCAPLUS
 CN 1,1'-Biphenyl, 3,3',4'-trichloro-2-methoxy- (9CI) (CA INDEX NAME)



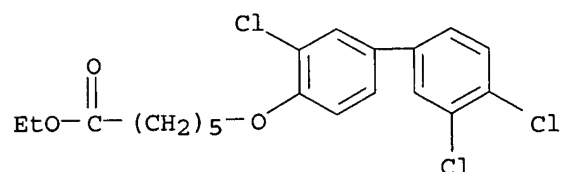
IT 168135-65-7P
 RL: BUU (Biological use, unclassified); PRP (Properties); RCT (Reactant);
 SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation);
 RACT (Reactant or reagent); USES (Uses)
 (preparation and hapten preparation)
 RN 168135-65-7 HCAPLUS
 CN Hexanoic acid, 6-[(3,3',4'-trichloro[1,1'-biphenyl]-4-yl)oxy]- (9CI) (CA
 INDEX NAME)



IT 168135-64-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)(preparation and hydrolysis for **hapten** preparation)

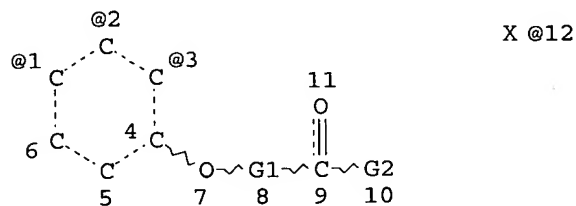
RN 168135-64-6 HCAPLUS

CN Hexanoic acid, 6-[(3,3',4'-trichloro[1,1'-biphenyl]-4-yl)oxy]-, ethyl
ester (9CI) (CA INDEX NAME)

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L1 STR



REP G1=(1-10) CH2

VAR G2=OH/NH

VPA 12-1/2/3 U

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

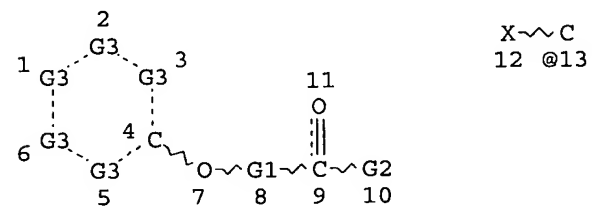
RSPEC I

NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

L3 56697 SEA FILE=REGISTRY SSS FUL L1

L4 STR



REP G1=(1-10) CH2

VAR G2=OH/NH

VAR G3=CH/13

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 13

STEREO ATTRIBUTES: NONE

L5 29874 SEA FILE=REGISTRY SUB=L3 SSS FUL L4
L6 103 SEA FILE=REGISTRY ABB=ON PLU=ON BOVINE SERUM ALBUMIN?/CN OR
OVALBUMIN? OR KEYHOLE LIMPET HEMOCYANIN?/CN
L7 24687 SEA FILE=HCAPLUS ABB=ON PLU=ON L5
L8 55623 SEA FILE=HCAPLUS ABB=ON PLU=ON L6 OR BOVINE(W) SERUM(W)
ALBUMIN? OR OVALBUMIN? OR KEYHOLE(W) LIMPET(W) HEMOCYANIN? OR
BSA OR OVA OR KLH
L9 214 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 (L) (ANTIGEN? OR HAPTEN?
OR IMMUNO? OR ANTIBOD? OR TRACER? OR RIA OR EIA OR FIA OR L8)
L10 191 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND PD=<MARCH 27, 2003
L11 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND (ANTIGEN? AND HAPTEN?
AND IMMUNO? AND ANTIBOD? AND TRACER?) AND (RIA OR EIA OR FIA
OR L8)
L12 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 AND L10
L13 80 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND (ANTIGEN? OR HAPTEN?
OR IMMUNO? OR ANTIBOD? OR TRACER?) AND (RIA OR EIA OR FIA OR
L8 OR RADIOIMMUNOASS? OR (FLUORESCEN? OR ENZYME) (W) IMMUNOASS?)
L14 54 SEA FILE=HCAPLUS ABB=ON PLU=ON L13 AND L10
L15 54 SEA FILE=HCAPLUS ABB=ON PLU=ON L12 OR L14
L16 103051 SEA FILE=REGISTRY ABB=ON PLU=ON DIOXIN OR DIOXINS
L17 16824 SEA FILE=REGISTRY ABB=ON PLU=ON PCDD OR DIBENZODIOXIN OR
PCFR OR DIBENZOFURAN
L18 400706 SEA FILE=REGISTRY ABB=ON PLU=ON BIPHENYL/BI
L20 65874 SEA FILE=REGISTRY ABB=ON PLU=ON L18 AND CHLORO?
L21 90073 SEA FILE=HCAPLUS ABB=ON PLU=ON L16 OR DIOXIN
L22 29704 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 OR PCDD OR DIBENZODIOXIN
OR PCFR OR DIBENZOFURAN
L23 54215 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 OR BIPHENYL(5A) POLYCHLORIN
? OR PCB
L26 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 AND (L21 OR L22 OR L23)
L27 50 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 NOT L26

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=>

=> d ibib abs hitstr 127 1-50

L27 ANSWER 1 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:1000216 HCAPLUS
DOCUMENT NUMBER: 141:152281
TITLE: Preparation of anti-2,4-dichlorophenol and
2,4-dichlorophenoxyacetic acid monoclonal
antibodies
AUTHOR(S): Tanaka, Hiroyuki; Yan, Shayu; Miura, Norio; Shoyama,
Yukihiro
CORPORATE SOURCE: Graduate School of Pharmaceutical Sciences, Kyushu
University, Higashi-ku, Fukuoka, 812-8582, Japan
SOURCE: Cytotechnology (2003), 42(2), 101-107
CODEN: CYTOER; ISSN: 0920-9069
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal

LANGUAGE: English

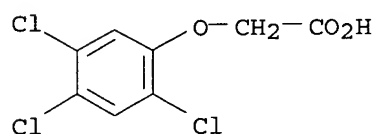
AB The ratios of **haptens** and **bovine serum albumin (BSA)** in an **antigen** conjugate were determined by matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF) mass spectrometry. Hybridomas secreting monoclonal **antibodies** against 2,4-dichlorophenoxyacetic acid (2,4-D) were produced by fusing 2,4-D-**BSA** conjugate-immunized splenocytes with a HAT-sensitive mouse myeloma cell line, P3-X63-Ag8-653. A substantial cross-reaction was observed for 2,4-dichlorophenol (2,4-DP) when compared with that observed for 2,4-D. The full measurement range for this assay is 0.2-3 µg ml⁻¹ for 2,4-DP. On the other hand, the range for 2,4-D is between 1 and 20 µg ml⁻¹.

IT 93-76-5, 2,4,5-Trichlorophenoxyacetic acid 122-88-3, p-Chlorophenoxyacetic acid

RL: ANT (Analyte); ANST (Analytical study)
(low crossreactivity with; preparation of anti-dichlorophenol and dichlorophenoxyacetic acid monoclonal **antibodies** for use in ELISA detection of 2,4-D pollution)

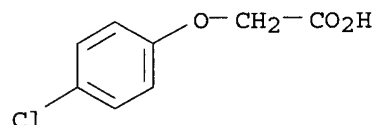
RN 93-76-5 HCAPLUS

CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



RN 122-88-3 HCAPLUS

CN Acetic acid, (4-chlorophenoxy)- (9CI) (CA INDEX NAME)

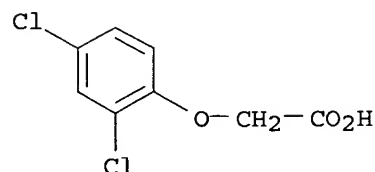


IT 94-75-7, 2,4-Dichlorophenoxyacetic acid, analysis

RL: ANT (Analyte); POL (Pollutant); RCT (Reactant); ANST (Analytical study); OCCU (Occurrence); RACT (Reactant or reagent)
(preparation of anti-dichlorophenol and dichlorophenoxyacetic acid monoclonal **antibodies** for use in ELISA detection of 2,4-D pollution)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



IT 94-75-7DP, 2,4-Dichlorophenoxyacetic acid, serum albumin conjugates

L27 ANSWER 3 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:768762 HCAPLUS
 DOCUMENT NUMBER: 138:12073
 TITLE: Biological Monitoring of 2,4,5-Trichlorophenol (I):
 Preparation of **Antibodies** and Development of
 an **Immunoassay** Using Theoretical Models
 AUTHOR(S): Nichkova, Mikaela; Galve, Roger; Marco, M.-Pilar
 CORPORATE SOURCE: Department of Biological Organic Chemistry,
 IIQAB-CSIC, Barcelona, 08034, Spain
 SOURCE: Chemical Research in Toxicology (2002),
15(11), 1360-1370
 CODEN: CRTOEC; ISSN: 0893-228X
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

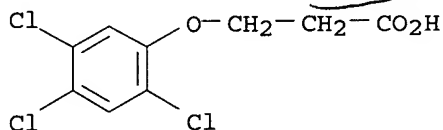
AB **Antibodies** against 2,4,5-trichlorophenol have been prepared after theor. and mol. modeling chemical studies of three potential immunizing **haptens** with the aim to find out the one mimicking best the target analyte. Competitive direct and indirect ELISAs have been developed after screening a battery of **haptized enzyme tracers** and coating **antigens**, resp. The relation between the degree of heterol. of the competitor and the resulting **immunoassay** detectability has been investigated according to the electronic similarities of the competitor **haptens** with the target analyte taking in consideration their pKa values. These studies have been performed using theor. and mol. modeling tools to find out their electronic distribution at their min. energetic levels. The results suggest that the competitors should have a high homol. to produced assays with good detectability values. On the other hand detectability improves when lowering the **hapten** d. of the competitors. An indirect competitive ELISA has been finally selected for further investigation. The **immunoassay** has an IC50 value of 0.6 µg L-1 and a limit of detection of 0.084 µg L-1. The selectivity of the assay is high in relation to other chlorophenols frequently present in real samples. In contrast, the brominated analogs may also be recognized with this assay.

IT 582-53-6

RL: BUU (Biological use, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
 (biol. monitoring of trichlorophenol and preparation of **antibodies** and development of **immunoassay** using theor. models)

RN 582-53-6 HCAPLUS

CN Propanoic acid, 3-(2,4,5-trichlorophenoxy)- (9CI) (CA INDEX NAME)



IT 588-32-9P

RL: BUU (Biological use, unclassified); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (**hapten**; biol. monitoring of trichlorophenol and preparation of **antibodies** and development of **immunoassay** using theor. models)

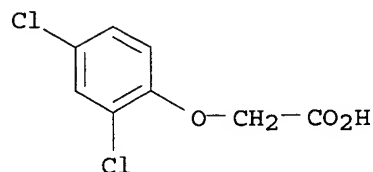
RN 588-32-9 HCAPLUS

CN Acetic acid, (3-chlorophenoxy)- (9CI) (CA INDEX NAME)

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of anti-dichlorophenol and dichlorophenoxyacetic acid
 monoclonal **antibodies** for use in ELISA detection of 2,4-D
 pollution)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 2 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:866710 HCAPLUS

DOCUMENT NUMBER: 139:318704

TITLE: Radioimmunological determination of 2,4-D in soil

INVENTOR(S): Dorobantu, Ioan

PATENT ASSIGNEE(S): Institutul de Fizica si Inginerie Nucleara
 Bucuresti-Magurele, Rom.

SOURCE: Rom., 3 pp.

CODEN: RUXXA3

DOCUMENT TYPE: Patent

LANGUAGE: Romanian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

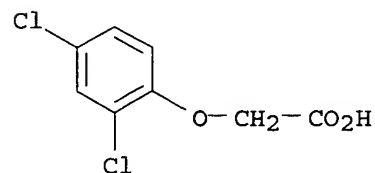
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RO 117819	B1	20020730	RO 1996-786	19960409 <--
PRIORITY APPLN. INFO.:			RO 1996-786	19960409

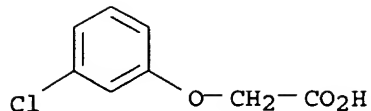
AB 2,4-D is extracted from soil with a mixture of EtOH, MeOH and 0.1M NaOH, in a 1:1:2 ratio by volume The extract is mixed with a a 0.2M phosphate buffer (pH 7.2), anti-2,4-D antiserum, manufactured by rabbit, and 2,4-D-tyramine-125I marker. The mixture is kept. for 2 h at room temperature, followed by treatment with 50% (NH4)2SO4. The precipitate is separated by centrifuging and its radioactivity is determined

IT 94-75-7, 2,4-D, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (RIA of 2,4-D in soil)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)





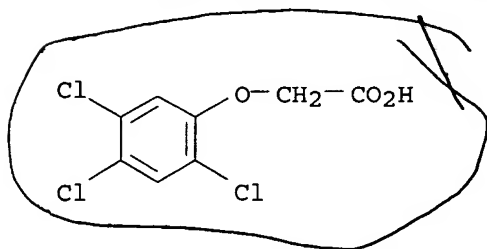
IT 93-76-5 575-89-3

RL: BUU (Biological use, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)

(hapten; biol. monitoring of trichlorophenol and preparation of antibodies and development of immunoassay using theor. models)

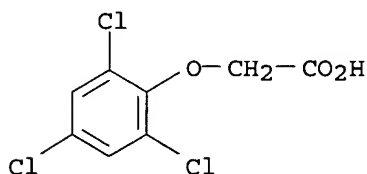
RN 93-76-5 HCAPLUS

CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



RN 575-89-3 HCAPLUS

CN Acetic acid, (2,4,6-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)

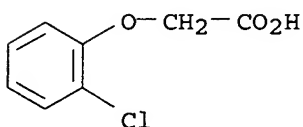


IT 614-61-9, 2-Chlorophenoxyacetic acid

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with Me bromoacetate)

RN 614-61-9 HCAPLUS

CN Acetic acid, (2-chlorophenoxy)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 4 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:619965 HCAPLUS

DOCUMENT NUMBER: 137:290236

TITLE: A simple assay for 2,4-dichlorophenoxyacetic acid using coated test-strips

AUTHOR(S): Weetall, Howard H.; Rogers, Kim R.

CORPORATE SOURCE: U.S. Environmental Protection Agency, National Exposure Research Laboratory, Las Vegas, NV, 89119, USA

SOURCE: Analytical Letters (2002), 35(8), 1341-1348
CODEN: ANALBP; ISSN: 0003-2719

PUBLISHER: Marcel Dekker, Inc.

DOCUMENT TYPE: Journal

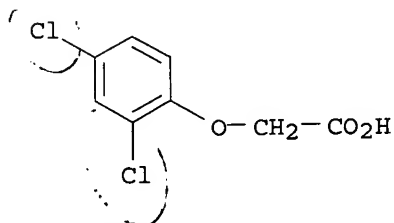
LANGUAGE: English

AB **Immunoassay** test strips utilizing ascending chromatog. have been devised for the detection of 2,4-dichlorophenoxyacetic acid (2,4-D). This test is inexpensive, requires no instrumentation, and relies on the application of **antibodies** to 2,4-D adsorbed onto colloidal gold particles. The assay, although not completely optimized, is capable of detecting 0.02 µg/mL. The format for this assay involves addition of the unknown sample to a small test tube that contains 0.25 mL buffer and anti-2,4-D colloidal gold conjugate followed by addition of the test strip. The anti-2,4-D gold conjugate comigrates with the sample past preadsorbed bovine albumin labeled with 2,4-D (**BSA-2,4-D**). If 2,4-D is present in the unknown sample at concns. above the threshold value, then the colloidal gold-labeled anti-2,4-D **antibody** will not bind to the **BSA-2,4-D** adsorbed to the nitrocellulose strip but will continue to migrate toward the top of the strip. To determine the presence of the analyte, the colloidal gold-labeled **antibody** that binds to the **BSA-2,4-D** zone (as determined by a visible purple band) is compared to pos. (containing concns. of 2,4-D above 0.02 µg/mL) and neg. controls (containing no analyte).

IT 94-75-7, 2,4-Dichlorophenoxyacetic acid, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detection of 2,4-D by **immunoassay** using coated test strips and ascending chromatog.)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER (5) OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:365353 HCAPLUS

DOCUMENT NUMBER: 137:58925

TITLE: New approach to **immunochemical** determinations for triclopyr and 3,5,6-trichloro-2-pyridinol by using a bifunctional **hapten**, and evaluation of polyclonal antiserum

AUTHOR(S): Watanabe, Eiki; Hoshino, Ryoko; Kanzaki, Yukiko; Tokumoto, Hiroshi; Kubo, Hiroaki; Nakazawa, Hiroyuki

CORPORATE SOURCE: Department of Analytical Chemistry Faculty of Pharmaceutical Sciences, Hoshi University, Shinagawa-ku Tokyo, 142-8501, Japan

SOURCE: Journal of Agricultural and Food Chemistry (2002), 50(13), 3637-3646
CODEN: JAFCAU; ISSN: 0021-8561

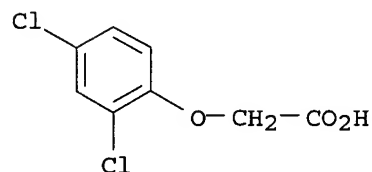
PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 137:58925

AB The present work describes the design and synthesis of the structurally unique **hapten**, "bifunctional **hapten**", to produce a group-specific polyclonal antiserum to triclopyr and 3,5,6-trichloro-2-pyridinol. A bifunctional **hapten** was designed and synthesized by conjugating com. available Nε-2,4-dinitrophenyl (DNP)-L-lysine to triclopyr, and then coupling this to carrier proteins such as **bovine serum albumin (BSA)**. The synthesized bifunctional **hapten** greatly raised the antiserum titer in comparison with that of the conventional **hapten**, triclopyr. Antiserum with a sufficiently high titer to provide the detns. of targeted compds. was obtained only 63 days after the primary immunization. The obtained antiserum showed the highest affinity to triclopyr (IC₅₀ = 3.5 nM) and 3,5,6-trichloro-2-pyridinol (IC₅₀ = 5.1 nM) in homologous ELISA. The cross-reactivities to various agrochems. and some chlorinated phenolic compds. were determined. Significant cross-reactivity was found to the herbicide 2,4,5-T. The antiserum reacted to both triclopyr and its metabolite. Assay sensitivity was evaluated for effects of various assay conditions, including pH value and concns. of organic solvents and detergents. Under optimized assay conditions, the quant. working range of triclopyr ELISA was from 0.1 to 5.2 ng/mL with a limit of detection (LOD) of 0.037 ng/mL, and an IC₅₀ of 0.72 ng/mL. On the other hand, the quant. working range of 3,5,6-trichloro-2-pyridinol ELISA was from 0.13 to 6.0 ng/mL with a LOD of 0.052 ng/mL, and an IC₅₀ of 0.95 ng/mL. Water samples fortified with triclopyr or its metabolite at 1, 5, and 10 ng/mL were directly analyzed without extraction and cleanup by the proposed ELISA. The mean recovery was 101.6%, and the mean coefficient of variation (CV) was 7.1% in the case of the triclopyr ELISA. In the case of the 3,5,6-trichloro-2-pyridinol ELISA, the mean recovery was 99.8%, and the mean CV was 9.5%. The proposed ELISA turned out to be a powerful tool for monitoring of residual triclopyr or 3,5,6-trichloro-2-pyridinol in water samples at trace level.

IT 94-75-7, 2,4-D, analysis 94-82-6, 2,4-DB
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (cross-reactivity of polyclonal antiserum for **immunochem.**
 detns. of triclopyr and 3,5,6-trichloro-2-pyridinol and to)

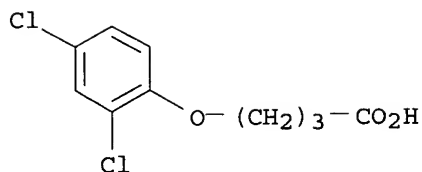
RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)

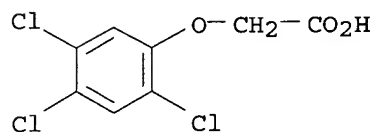


RN 94-82-6 HCAPLUS

CN Butanoic acid, 4-(2,4-dichlorophenoxy)- (9CI) (CA INDEX NAME)



IT 93-76-5, 2,4,5-T
 RL: ARU (Analytical role, unclassified); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)
 (preparation of bifunctional **hapten** for **immunochem.**
 detns. of triclopyr and 3,5,6-trichloro-2-pyridinol and
 cross-reactivity of polyclonal antiserum to)
 RN 93-76-5 HCAPLUS
 CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER ⁶ OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:315519 HCAPLUS
 DOCUMENT NUMBER: 137:58744
 TITLE: Use of L-Lysine Fluorescence Derivatives as
Tracers To Enhance the Performance of
 Polarization Fluoroimmunoassays. A Study Using Two
 Herbicides as Model **Antigens**
 AUTHOR(S): Hatzidakis, George I.; Tsatsakis, Aristidis M.;
 Krambovitis, Elias K.; Spyros, Apostolos; Eremin,
 Sergei A.
 CORPORATE SOURCE: Laboratory of Toxicology, Medical School, University
 of Crete, Voutes, Heraklion, 71110, Greece
 SOURCE: Analytical Chemistry (2002), 74(11),
 2513-2521
 CODEN: ANCHAM; ISSN: 0003-2700
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Fluorescence polarization **immunoassay** (FPIA) is a convenient
 homogeneous assay, the use of which is restricted in environmental anal.
 by low sensitivity and matrix effects. We selected the herbicides 2,4-D
 and 2,4,5-T to synthesize new L-lysine-based fluorescent **tracers**
 using solid-phase chemical. In addition, three different **immunogens** of
 2,4,5-T were prepared for immunization and **antibody** production. The
 new **tracers** and **antibodies** were adapted to FPIA.
Tracers with the **hapten** attached to the α -amino
 group of L-lysine and fluorescein to the ϵ -amino group exhibited at least
 a 5-fold increased sensitivity when compared to the previously reported
 ethylenediamine-based **tracer** (2,4-D-EDA-F). The isomeric
 structure (**hapten** attached to the ϵ -amino and fluorescein to the
 α -amino group) appeared 7.6 times less sensitive, and all other

alternative structures exhibited even lower sensitivities. This observation was confirmed against the monoclonal anti-2,4-D antibody E2/G2 and polyclonal anti-2,4,5-T antibodies. The affinity constant of 2,4-D-EDA-F with E2/G2 was 8.1 times higher when compared with the new tracer, suggesting the more specific nature of the L-lysine-based tracer, the use of which leads to a more sensitive assay. This type of tracer could improve performance and lower substantially the detection limits of FPIAs.

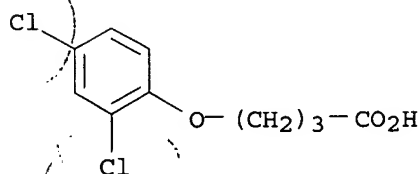
IT 94-82-6, 2,4-Dichlorophenoxy butyric acid 122-88-3,
4-Chlorophenoxy acetic acid 399-41-7, 2-Chloro-4-fluorophenoxy
acetic acid 582-54-7, 2,5-Dichlorophenoxy acetic acid
614-61-9, 2-Chlorophenoxy acetic acid 3284-80-8

RL: ANT (Analyte); ANST (Analytical study)

(cross-reactivity with; preparation and use of L-lysine fluorescence derivs.
as tracers to enhance performance of polarization
fluoroimmunoassays using two herbicides as model antigens)

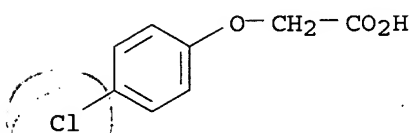
RN 94-82-6 HCAPLUS

CN Butanoic acid, 4-(2,4-dichlorophenoxy)- (9CI) (CA INDEX NAME)



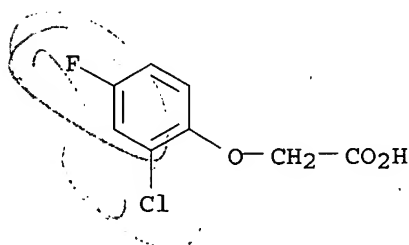
RN 122-88-3 HCAPLUS

CN Acetic acid, (4-chlorophenoxy)- (9CI) (CA INDEX NAME)



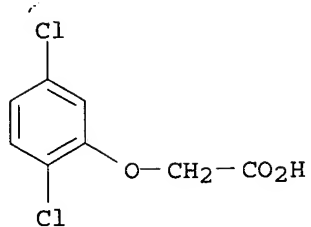
RN 399-41-7 HCAPLUS

CN Acetic acid, (2-chloro-4-fluorophenoxy)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

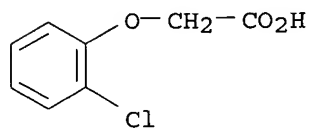


RN 582-54-7 HCAPLUS

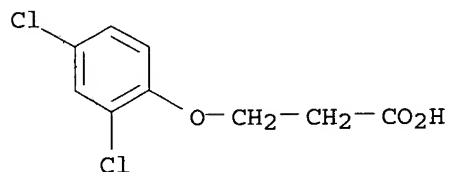
CN Acetic acid, (2,5-dichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



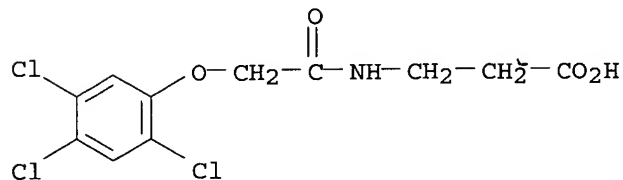
RN 614-61-9 HCAPLUS
CN Acetic acid, (2-chlorophenoxy)- (9CI) (CA INDEX NAME)



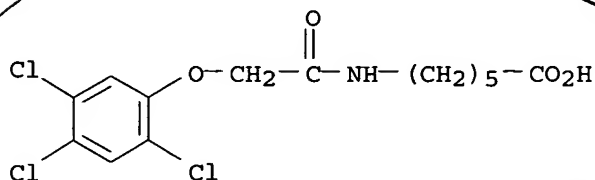
RN 3284-80-8 HCAPLUS
CN Propanoic acid, 3-(2,4-dichlorophenoxy)- (9CI) (CA INDEX NAME)



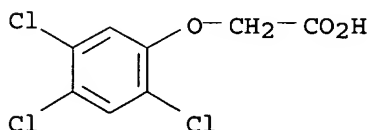
IT 101495-68-5P 439286-73-4DP, bound to bovine serum albumin
RL: SPN (Synthetic preparation); PREP (Preparation)
(**hapten**; preparation and use of L-lysine fluorescence derivs. as **tracers** to enhance performance of polarization fluoroimmunoassays using two herbicides as model **antigens**)
RN 101495-68-5 HCAPLUS
CN β -Alanine, N-[(2,4,5-trichlorophenoxy)acetyl]- (6CI, 9CI) (CA INDEX NAME)



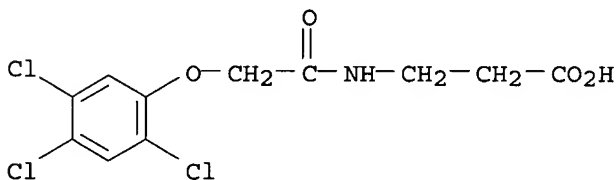
RN 439286-73-4 HCAPLUS
CN Hexanoic acid, 6-[[[(2,4,5-trichlorophenoxy)acetyl]amino]- (9CI) (CA INDEX NAME)



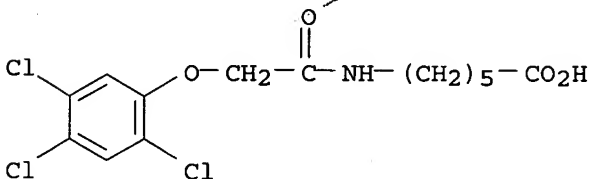
IT 93-76-5DP, 2,4,5-T, bound to bovine serum albumin
~~101495-68-5DP~~, bound to bovine serum albumin 439286-73-4P
 RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses) (immunogen; preparation and use of L-lysine fluorescence derivs. as tracers to enhance performance of polarization fluoroimmunoassays using two herbicides as model antigens)
 RN 93-76-5 HCAPLUS
 CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



RN 101495-68-5 HCAPLUS
 CN β -Alanine, N-[(2,4,5-trichlorophenoxy)acetyl]- (6CI, 9CI) (CA INDEX NAME)



RN 439286-73-4 HCAPLUS
 CN Hexanoic acid, 6-[[[(2,4,5-trichlorophenoxy)acetyl]amino]- (9CI) (CA INDEX NAME)

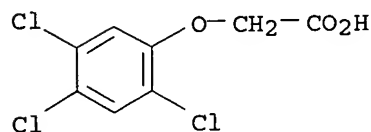


IT 93-76-5, 2,4,5-T 94-75-7, 2,4-D, analysis
 10129-78-9
 RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)

(preparation and use of L-lysine fluorescence derivs. as **tracers**
to enhance performance of polarization fluoroimmunoassays using two
herbicides as model **antigens**)

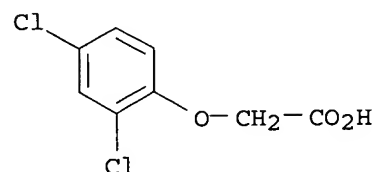
RN 93-76-5 HCAPLUS

CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



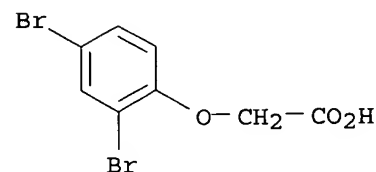
RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 10129-78-9 HCAPLUS

CN Acetic acid, (2,4-dibromophenoxy)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



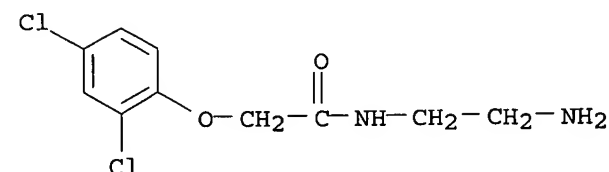
IT 49808-81-3P 50649-08-6P 439286-51-8P
439286-52-9P 439286-53-0P 439286-54-1P
439286-55-2P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)

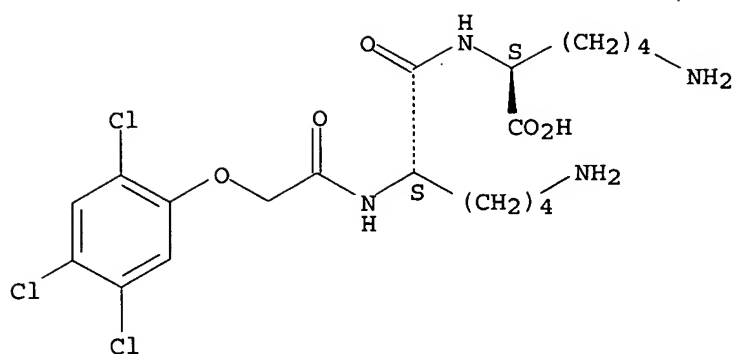
(preparation and use of L-lysine fluorescence derivs. as **tracers**
to enhance performance of polarization fluoroimmunoassays using two
herbicides as model **antigens**)

RN 49808-81-3 HCAPLUS

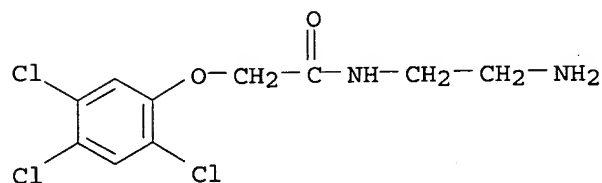
CN Acetamide, N-(2-aminoethyl)-2-(2,4-dichlorophenoxy)- (9CI) (CA INDEX
NAME)



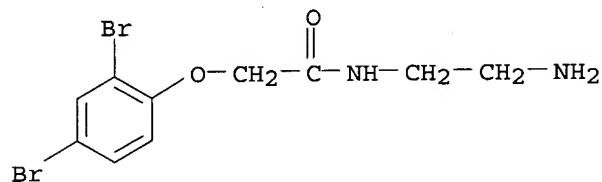
RN 50649-08-6 HCAPLUS



RN 439286-54-1 HCAPLUS
 CN Acetamide, N-(2-aminoethyl)-2-(2,4,5-trichlorophenoxy)- (9CI) (CA INDEX NAME)



RN 439286-55-2 HCAPLUS
 CN Acetamide, N-(2-aminoethyl)-2-(2,4-dibromophenoxy)- (9CI) (CA INDEX NAME)

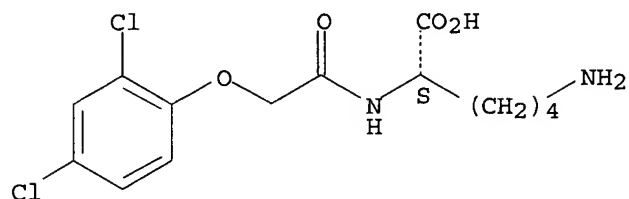


IT 439286-56-3P 439286-57-4P 439286-58-5P
 439286-59-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and use of L-lysine fluorescence derivs. as **tracers**
 to enhance performance of polarization fluoroimmunoassays using two
 herbicides as model **antigens**)
 RN 439286-56-3 HCAPLUS
 CN Hexanamide, 2-amino-N-[2-[[[(2,4-dichlorophenoxy)acetyl]amino]ethyl]-6-[[[(4-methoxyphenyl)diphenylmethyl]amino]-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

CN L-Lysine, N2-[(2,4-dichlorophenoxy)acetyl]- (9CI) (CA INDEX NAME)

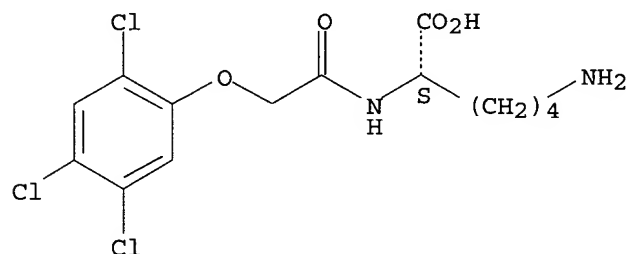
Absolute stereochemistry.



RN 439286-51-8 HCAPLUS

CN L-Lysine, N2-[(2,4,5-trichlorophenoxy)acetyl]- (9CI) (CA INDEX NAME)

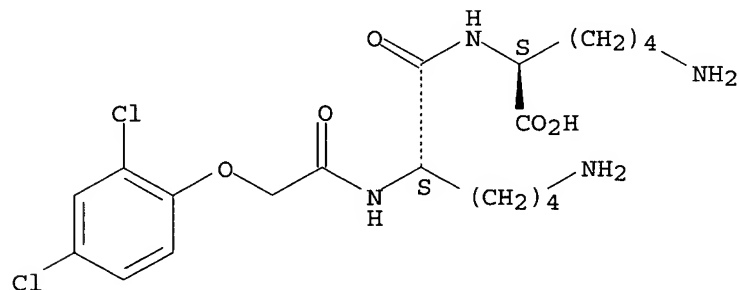
Absolute stereochemistry.



RN 439286-52-9 HCAPLUS

CN L-Lysine, N2-[(2,4-dichlorophenoxy)acetyl]-L-lysyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

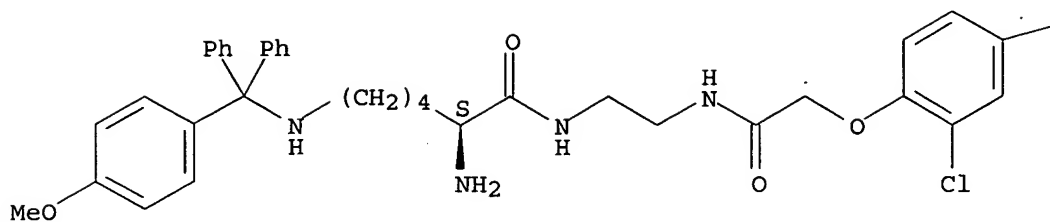


RN 439286-53-0 HCAPLUS

CN L-Lysine, N2-[(2,4,5-trichlorophenoxy)acetyl]-L-lysyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



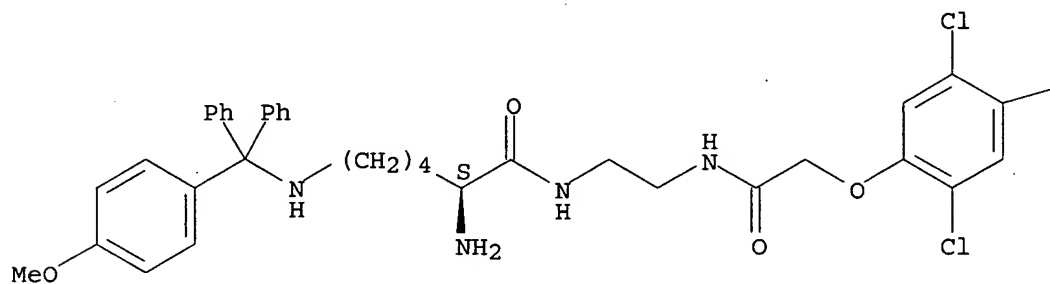
PAGE 1-B

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RN 439286-57-4 HCAPLUS
 CN Hexanamide, 2-amino-6-[[[(4-methoxyphenyl)diphenylmethyl]amino]-N-[2-
 [[(2,4,5-trichlorophenoxy)acetyl]amino]ethyl]-, (2S)- (9CI) (CA INDEX
 NAME)

Absolute stereochemistry.

PAGE 1-A

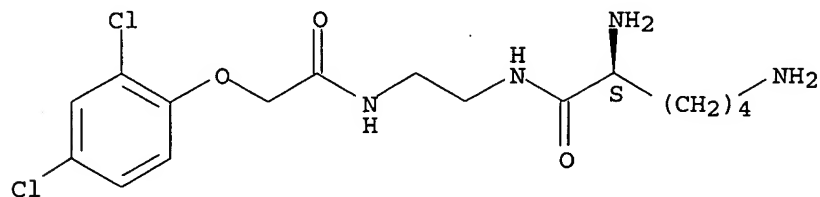


PAGE 1-B

—Cl

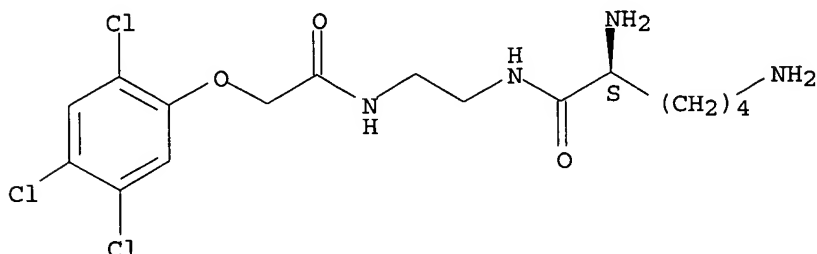
RN 439286-58-5 HCAPLUS
 CN Hexanamide, 2,6-diamino-N-[2-[[[(2,4-dichlorophenoxy)acetyl]amino]ethyl]-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 439286-59-6 HCAPLUS
 CN Hexanamide, 2,6-diamino-N-[2-[[[(2,4,5-trichlorophenoxy)acetyl]amino]ethyl]-
 , (2S)- (9CI) (CA INDEX NAME)

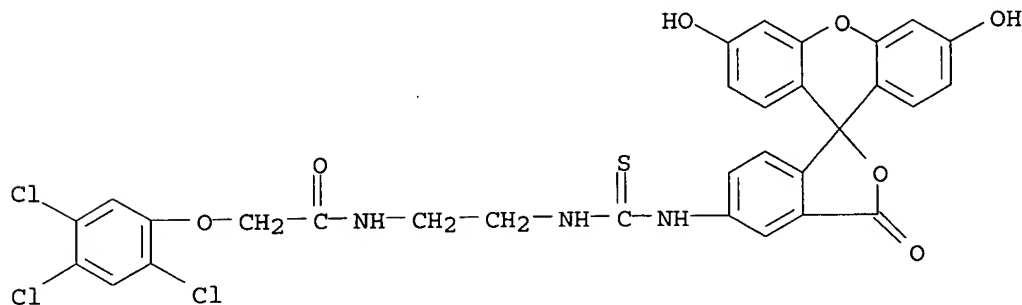
Absolute stereochemistry.



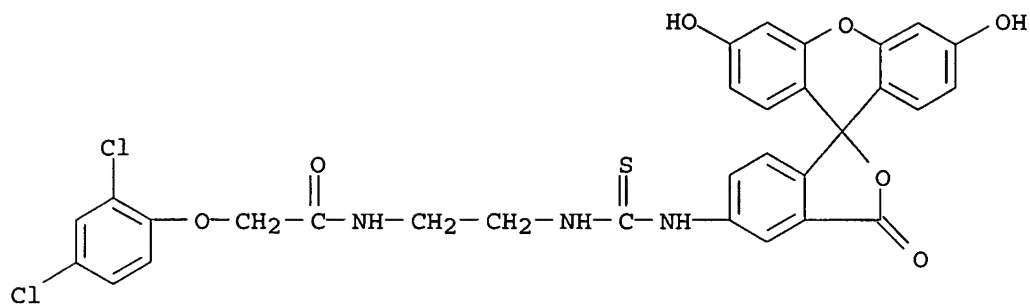
IT 163405-35-4P 209791-97-9P 439286-60-9P
 439286-61-0P 439286-62-1P 439286-63-2P
 439286-65-4P 439286-66-5P 439286-68-7P
 439286-69-8P 439286-70-1P 439286-71-2P
 439286-72-3P

RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
 (tracer; preparation and use of L-lysine fluorescence derivs. as tracers to enhance performance of polarization fluorooimmunoassays using two herbicides as model antigens)

RN 163405-35-4 HCAPLUS
 CN Acetamide, N-[2-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]amino]ethyl]-2-(2,4,5-trichlorophenoxy)- (9CI) (CA INDEX NAME)



RN 209791-97-9 HCAPLUS
 CN Acetamide, 2-(2,4-dichlorophenoxy)-N-[2-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]amino]ethyl]- (9CI) (CA INDEX NAME)

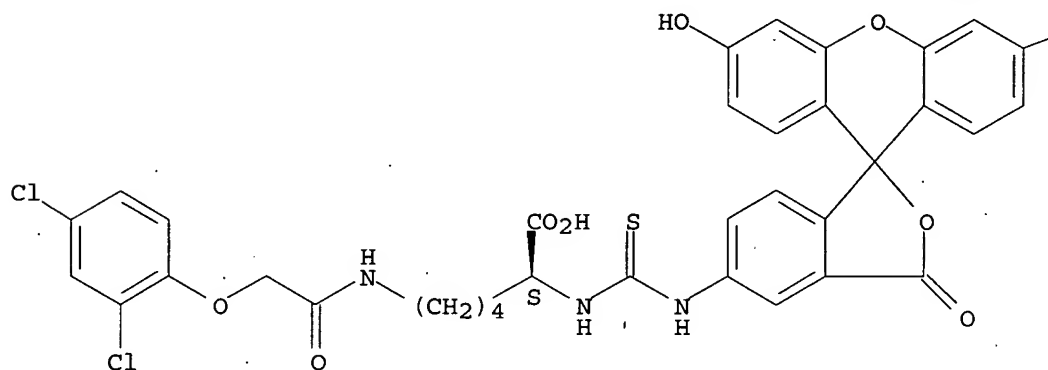


RN 439286-60-9 HCAPLUS

CN L-Lysine, N6-[(2,4-dichlorophenoxy)acetyl]-N2-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

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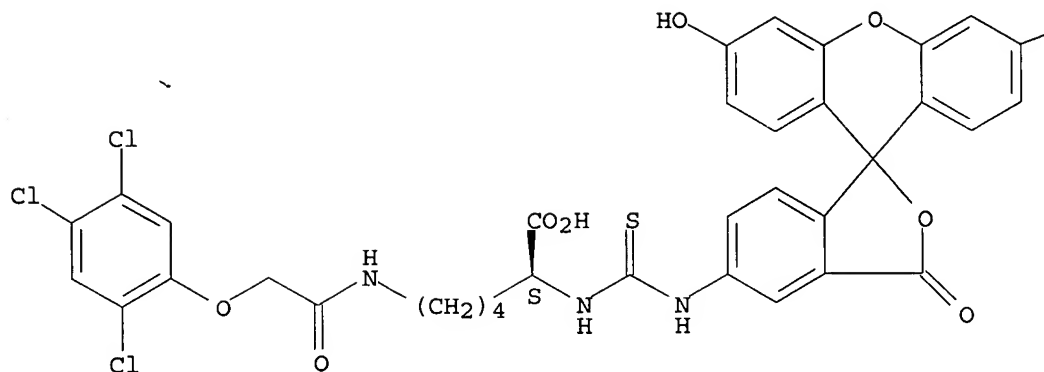
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RN 439286-61-0 HCAPLUS

CN L-Lysine, N2-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]-N6-[(2,4,5-trichlorophenoxy)acetyl]-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

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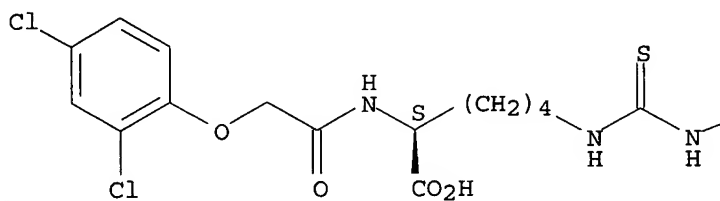
—OH

RN 439286-62-1 HCAPLUS
 CN L-Lysine, N2-[(2,4-dichlorophenoxy)acetyl]-N6-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-5-yl)amino]thioxomethyl]-(9CI) (CA INDEX NAME)

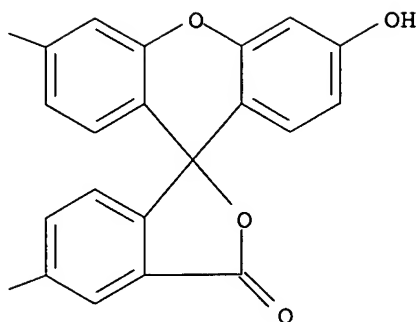
Absolute stereochemistry.

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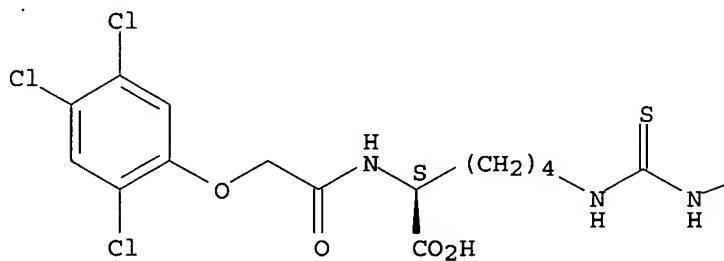
RN 439286-63-2 HCAPLUS

CN L-Lysine, N6-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl) amino]thioxomethyl]-N2-[(2,4,5-trichlorophenoxy)acetyl]-(9CI) (CA INDEX NAME)

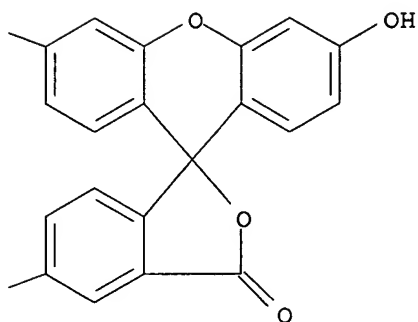
Absolute stereochemistry.

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PAGE 1-B



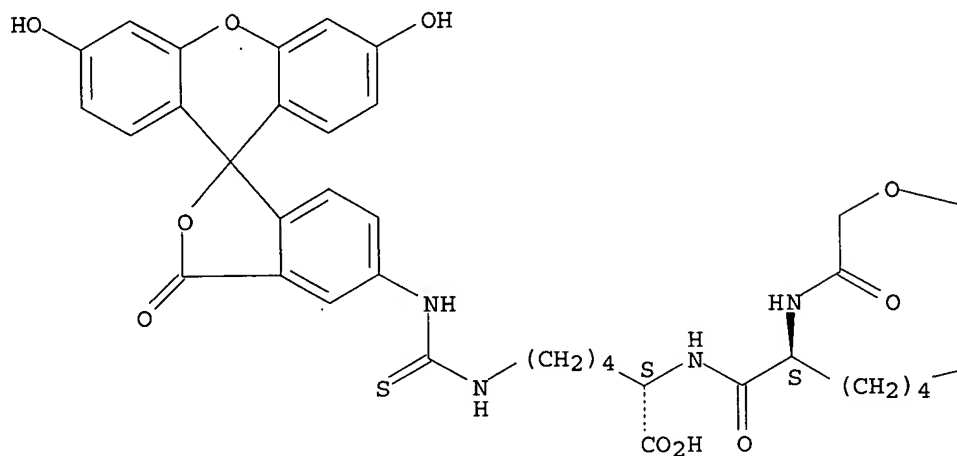
RN 439286-65-4 HCAPLUS

CN L-Lysine, N2-[(2,4-dichlorophenoxy)acetyl]-N6-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl) amino]thioxomethyl]-L-

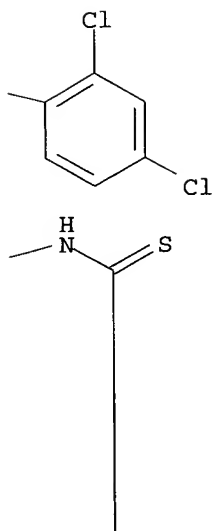
lysyl-N6-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]-(9CI) (CA INDEX NAME)

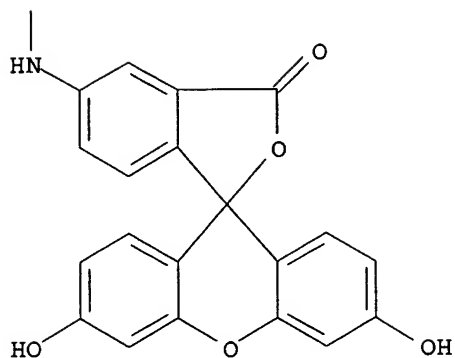
Absolute stereochemistry.

PAGE 1-A



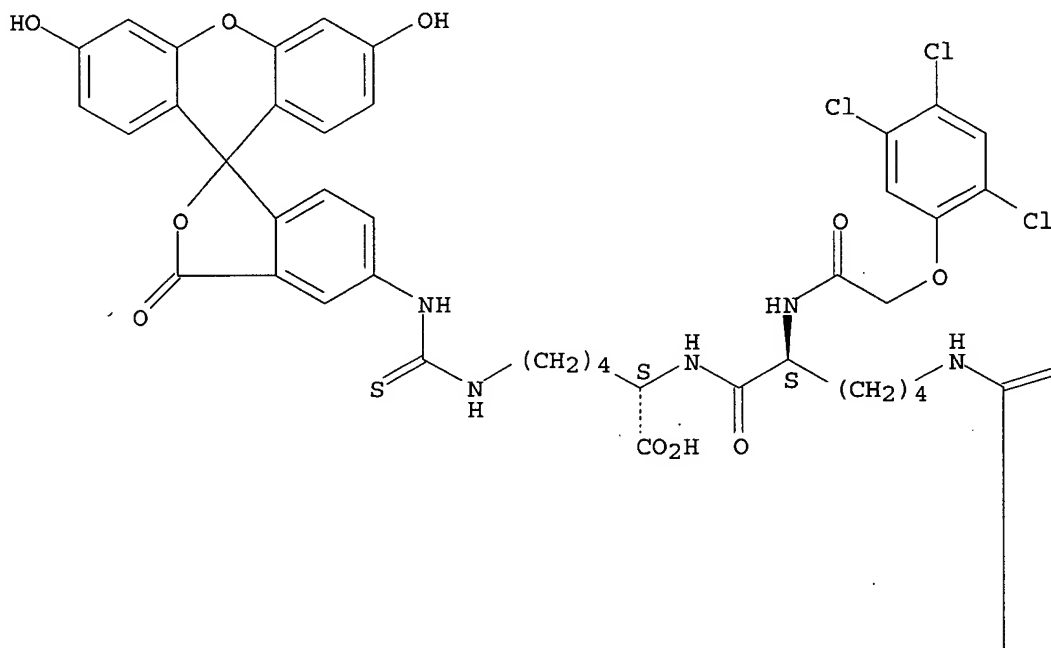
PAGE 1-B





RN 439286-66-5 HCAPLUS
 CN L-Lysine, N6-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9']-[9H]xanthen]-5-yl)amino]thioxomethyl]-N2-[(2,4,5-trichlorophenoxy)acetyl]-L-lysyl-N6-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9']-[9H]xanthen]-5-yl)amino]thioxomethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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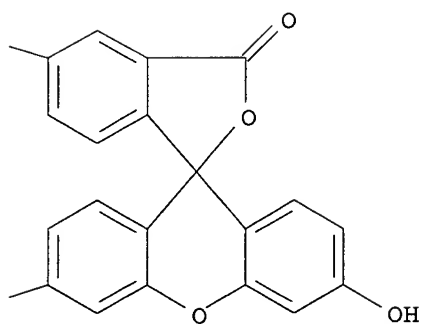
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PAGE 2-A

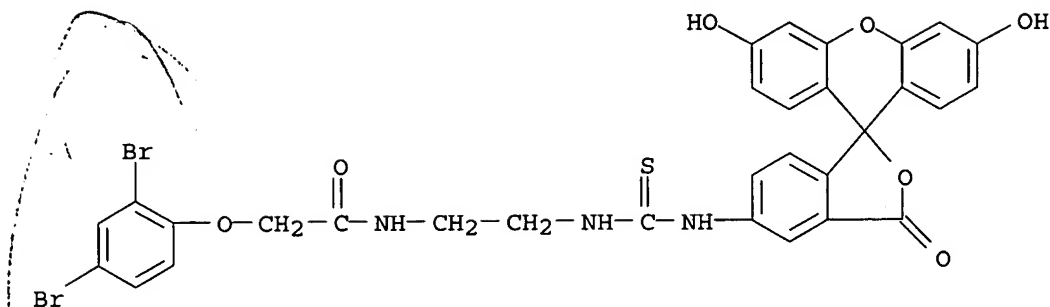
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RN 439286-68-7 HCAPLUS
 CN Acetamide, 2-(2,4-dibromophenoxy)-N-[2-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]amino]ethyl]- (9CI) (CA INDEX NAME)

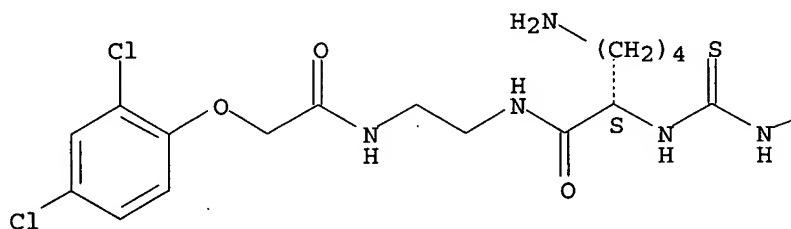


RN 439286-69-8 HCAPLUS
 CN Hexanamide, 6-amino-N-[2-[[[(2,4-dichlorophenoxy)acetyl]amino]ethyl]-2-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]amino]-, (2S)- (9CI) (CA INDEX NAME)

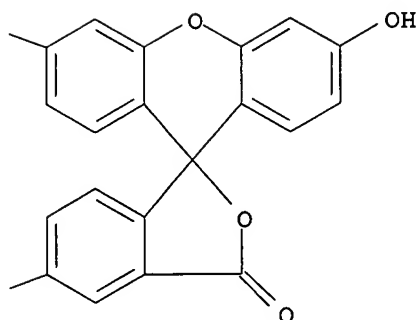
Absolute stereochemistry.

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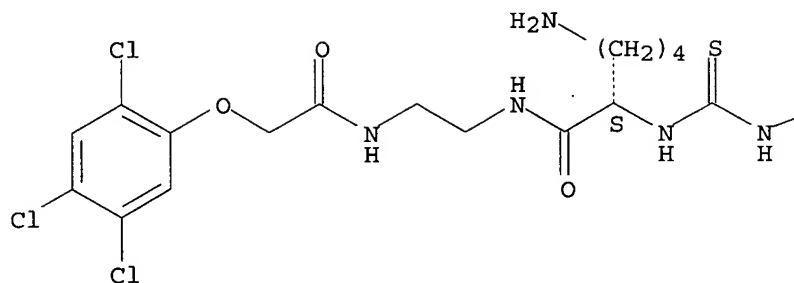


RN 439286-70-1 HCAPLUS
 CN Hexanamide, 6-amino-2-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]amino]-N-[2-[[[(2,4,5-trichlorophenoxy)acetyl]amino]ethyl]-, (2S)- (9CI) (CA INDEX NAME)

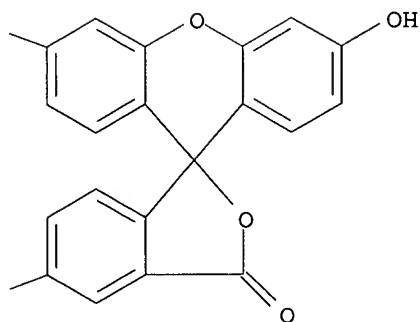
Absolute stereochemistry.

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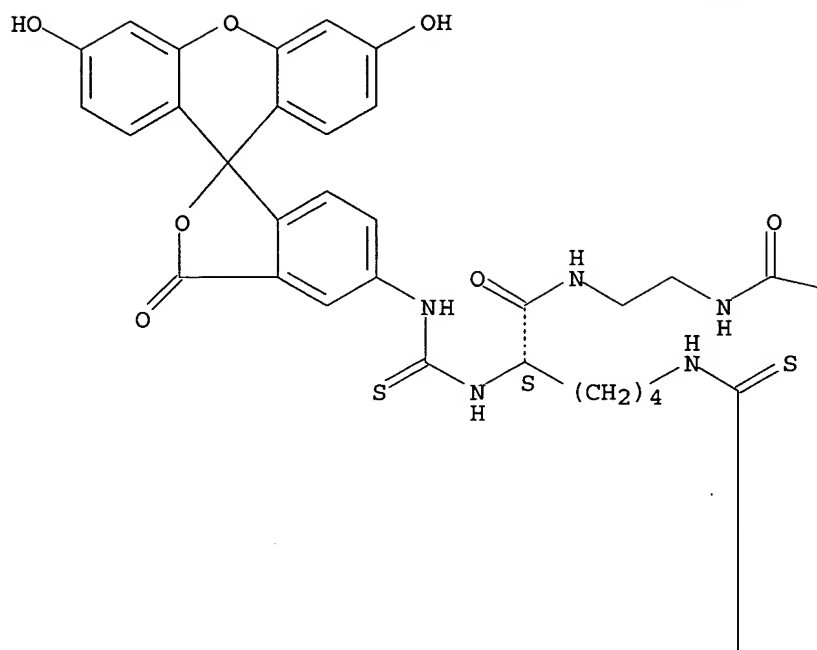
PAGE 1-B



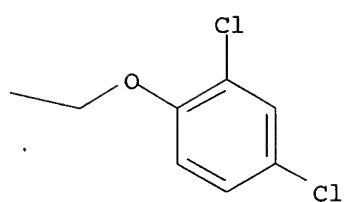
RN 439286-71-2 HCAPLUS
 CN Hexanamide, N-[2-[[[(2,4-dichlorophenoxy)acetyl]amino]ethyl]-2,6-bis[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]amino]-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

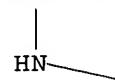
PAGE 1-A



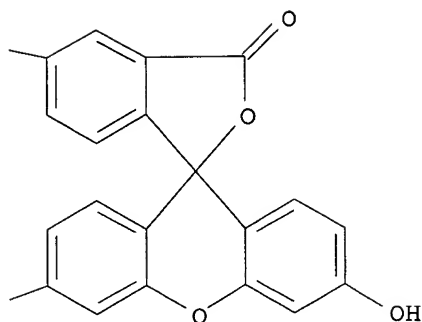
PAGE 1-B



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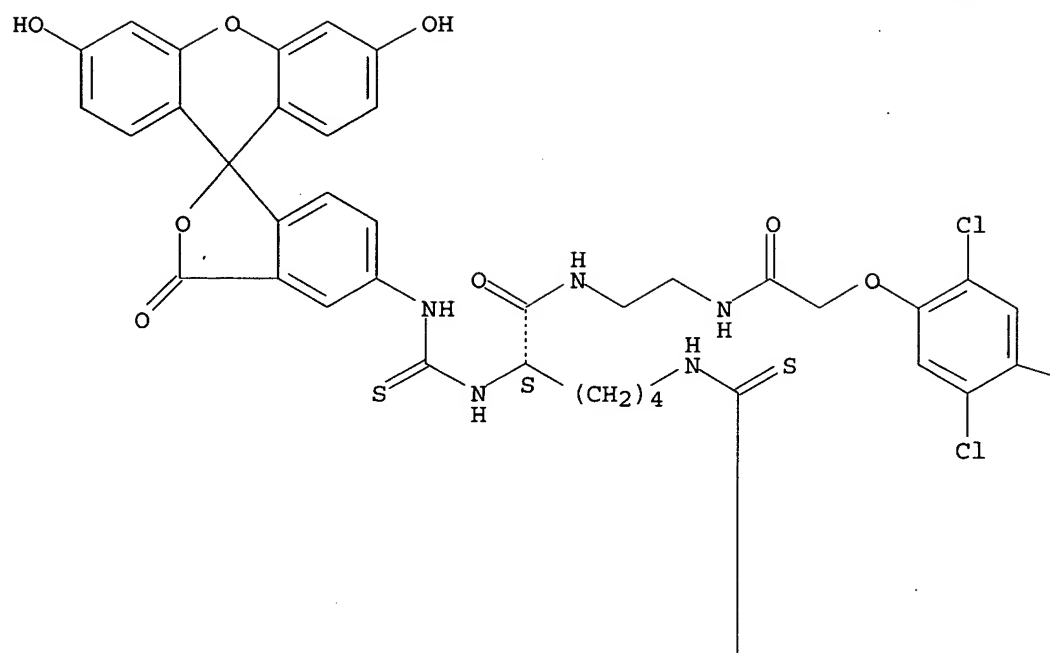
PAGE 2-B



RN 439286-72-3 HCAPLUS
CN Hexanamide, 2,6-bis[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]amino]-N-[2-[[[(2,4,5-trichlorophenoxy)acetyl]amino]ethyl]-, (2S)-(9CI) (CA INDEX NAME)

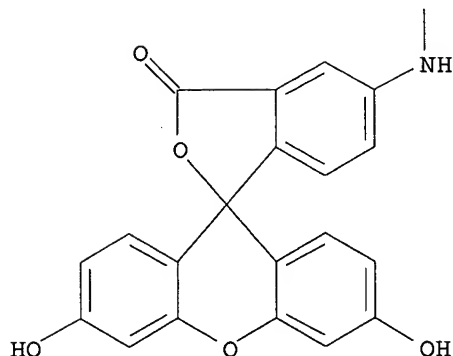
Absolute stereochemistry.

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REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 7 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:300752 HCAPLUS

DOCUMENT NUMBER: 136:284412

TITLE: Process for preparing **immunogenic** conjugates

INVENTOR(S): Dorobantu, Ioan; Cotarlea, Monica-Ionela

PATENT ASSIGNEE(S): Institutul de Fizica si Inginerie Nucleara
Bucuresti-Magurele, Bucuresti-Magurele, Rom.

SOURCE: Rom., 3 pp.
CODEN: RUXXA3

DOCUMENT TYPE: Patent

LANGUAGE: Romanian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

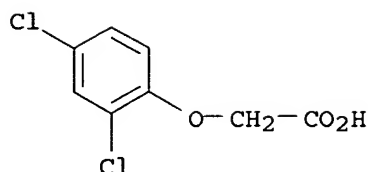
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RO 116460	B1	20010228	RO 1994-1349	19940809 <--
PRIORITY APPLN. INFO.:			RO 1994-1349	19940809

AB A method is disclosed for production of an **immunogenic** conjugate which is characterized by adding rapidly to an aqueous solution which contains 1.15 parts **bovine serum albumin** at 4 °C more than 0.221 parts of an organic pesticide such as 2,4-dichlorophenoxyacetic acid and 2-methoxy-3,6-dichlorobenzoic acid. The mixt is allowed to stand 20 h at 4 °C, centrifuged at 3000 rpm for 30 min, the precipitate is dialyzed 4 x 72 h with a solution 1:2 volume/volume of dioxane:water.

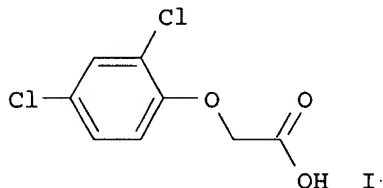
IT **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process);
USES (Uses)
(process for preparing **immunogenic** conjugates)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy) - (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 8 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:88401 HCAPLUS
 DOCUMENT NUMBER: 137:206506
 TITLE: Functionalized surfaces for optical biosensors: applications to in vitro pesticide residual analysis
 AUTHOR(S): Svitel, J.; Surugiu, I.; Dzgoev, A.; Ramanathan, K.; Danielsson, B.
 CORPORATE SOURCE: Pure and Applied Biochemistry, Lund University, Lund, 22100, Swed.
 SOURCE: Journal of Materials Science: Materials in Medicine (2001), 12(10/11/12), 1075-1078
 CODEN: JSMMEJ; ISSN: 0957-4530
 PUBLISHER: Kluwer Academic Publishers
 DOCUMENT TYPE: Journal
 LANGUAGE: English
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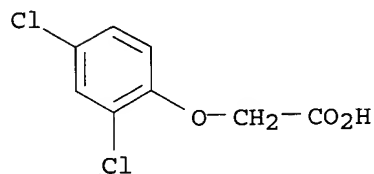
AB Functionalized biosensing surfaces were developed for chemiluminescent immunoassay of pesticides. Two approaches to construct functionalized surfaces were tested: (i) pesticide is immobilized to the surface and interacts with a labeled antibody; (ii) antibody is immobilized and interacts with a labeled pesticide. As labels alkaline phosphatase and peroxidase were used with their corresponding substrates CSPD and luminol, resp. Light produced by chemiluminescent substrate was detected by a thermoelec. cooled CCD camera or a photomultiplier. The best detection limit 0.00001 ng/mL was obtained using antibodies immobilized to dextran-enhanced surface. Completely renewable surface was obtained using reversible lectin-monosaccharide interaction, one surface was used for 200 analyses without any loss of binding capacity. Most favorable stability and cost per anal. was achieved with molecularly imprinted polymer (MIP) instead of antibody. The functionalized biosensing surfaces were prepared to detect 2,4-dichlorophenoxyacetic (2,4-D) acid(I) as a model pesticide. The developed concepts are, however, generally applicable to other pesticides and to other optical formats, e.g. optical fiber.

IT 94-75-7, 2,4-Dichlorophenoxyacetic acid, biological studies.
 RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering

or chemical process); PRP (Properties); PYP (Physical process); BIOL (Biological study); PROC (Process)
(applications of optical biosensors with functionalized surfaces to in vitro pesticide residual anal.)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



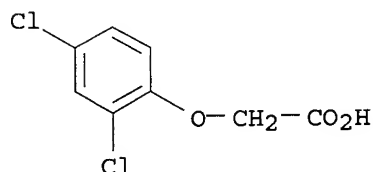
IT 94-75-7D, 2,4-Dichlorophenoxyacetic acid, conjugates with bovine serum albumin or Con A and α -glucose

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(applications of optical biosensors with functionalized surfaces to in vitro pesticide residual anal.)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 9 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:831377 HCAPLUS

DOCUMENT NUMBER: 136:33227

TITLE: Combining supercritical fluid extraction of soil herbicides with **enzyme immunoassay** analysis

AUTHOR(S): Stearman, G. Kim

CORPORATE SOURCE: Cent. for the Manage. Utilization and Protection of Water Resour., Tennessee Technol. Univ., Cookeville, TN, 38505-0001, USA

SOURCE: Molecular Biotechnology (2001), 19(2), 211-214

CODEN: MLBOEO; ISSN: 1073-6085

PUBLISHER: Humana Press Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Supercrit. fluid extraction (SFE) of soil herbicides followed by **enzyme immunoassay** anal. (EIA) is explained in a step-by-step process. Extracted herbicides, include 2,4-D, simazine, atrazine, and alachlor. The herbicide, trifluralin was not successfully analyzed by EIA because of crossreacting metabolites. Problems with SFE,

including uneven packing of cells, leaks, uneven flow and clogging, can largely be eliminated as the method parameters are optimized. It was necessary to add modifiers including methanol or acetone to the SF CO₂ to increase the solubility of the analytes. Detection limits of 2.5 ng/g soil for atrazine and alachlor and 15 ng/g soil for simazine and 2,4-D without concentration of the sample were achieved. Recoveries above 80% and relative standard deviations (RSDs) less than 15% for 2,4-D simazine, atrazine and alachlor were achieved. Atrazine and alachlor recoveries were above 90% with RSDs below 10%. Forty soil samples could be extracted and analyzed in an 8-h day.

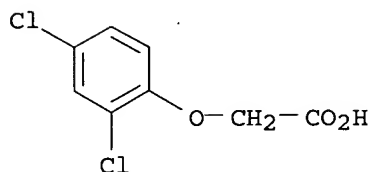
IT 94-75-7, 2,4-D, analysis

RL: ANT (Analyte); ANST (Analytical study)

(combining supercrit. fluid extraction of soil herbicides with enzyme immunoassay anal.)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 10 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:555562 HCAPLUS

DOCUMENT NUMBER: 135:269550

TITLE: Development of a flow injection capillary chemiluminescent ELISA using an imprinted polymer instead of the **antibody**

AUTHOR(S): Surugiu, Ioana; Svitel, Juraj; Ye, Lei; Haupt, Karsten; Danielsson, Bengt

CORPORATE SOURCE: Department of Pure and Applied Biochemistry Chemical Center, Lund University, Lund, S-22100, Swed.

SOURCE: Analytical Chemistry (2001), 73(17), 4388-4392

CODEN: ANCHAM; ISSN: 0003-2700

PUBLISHER: American Chemical Society

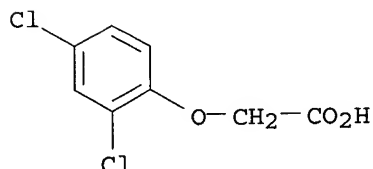
DOCUMENT TYPE: Journal

LANGUAGE: English

AB A flow injection competitive assay analogous to **enzyme immunoassays** has been developed using a molecularly imprinted polymer instead of the **antibody**. A glass capillary was modified by covalently attaching an imprinted polymer to the inner capillary wall. The herbicide 2,4-dichlorophenoxyacetic acid was used as a model analyte. The analyte was labeled with tobacco peroxidase, and chemiluminescence was used for detection in combination with a photomultiplier tube or a CCD camera. In a competitive mode, the analyte-peroxidase conjugate was passed together with the free analyte through the polymer-coated capillary mounted in a flow system. After a washing step, the chemiluminescent substrate was injected and the bound fraction of the conjugate was quantified by measuring the intensity of the emitted light. Calibration curves corresponding to analyte concns. ranging from 0.5 ng mL⁻¹ to 50 µg mL⁻¹ (2.25 nM-225 µM) were obtained. A lowered detection limit by 2 orders of magnitude was obtained when detection was done in

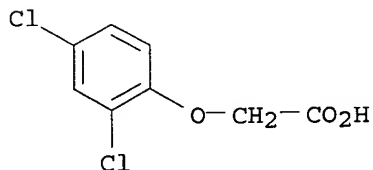
discontinuous mode and the chemiluminescence light was conducted inside the photomultiplier tube by an optical fiber bundle, thus yielding a dynamic range of 5 pg mL⁻¹-100 ng mL⁻¹ (22.5 pM-450 nM).

IT 94-75-7, 2,4-Dichlorophenoxyacetic acid, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (flow injection capillary chemiluminescent ELISA using imprinted polymer instead of **antibody**)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



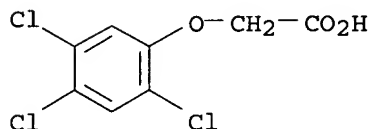
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 11 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2000:782287 HCAPLUS
 DOCUMENT NUMBER: 134:111543
 TITLE: Detection of pesticide residues and metabolites by **enzyme immunoassay**
 AUTHOR(S): Lu, Kangbo
 CORPORATE SOURCE: Northeast Agriculture University, Harbin, 150030, Peop. Rep. China
 SOURCE: Nongyao Kexue Yu Guanli (2000), 21(5), 15-18
 CODEN: NKYGEH; ISSN: 1002-5480
 PUBLISHER: Nongyebu Nongyao Jiandingso
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: Chinese
 AB A review with 10 refs. on the principle, type, development and application of **enzyme immunoassay** for detecting pesticide and its residues in water, soil and food.
 IT 94-75-7, 2,4-D, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detection of pesticide residues and metabolites by **enzyme immunoassay**)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 12 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2000:765059 HCAPLUS
 DOCUMENT NUMBER: 134:81834
 TITLE: An **enzyme immunoassay** for the organochlorine insecticide hexachlorocyclohexane

AUTHOR(S): (HCH), through conversion to trichlorophenols
 Beasley, H. L.; Pasha, A.; Guihot, S. L.; Skerriitt, J. H.
 CORPORATE SOURCE: CSIRO Plant Industry, North Ryde, 1670, Australia
 SOURCE: Food and Agricultural Immunology (2000),
 12(3), 203-215
 CODEN: FAIMEZ; ISSN: 0954-0105
 PUBLISHER: Carfax Publishing
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A method for **immunoassay** anal. of the organochlorine
 insecticide, hexachlorocyclohexane (HCH) has been developed, based upon
 alkaline conversion in stds. and samples to trichlorobenzenes. The
 trichlorobenzenes were detected through antisera developed to
haptens containing either a trichlorobenzene or trichloropyridine
 moiety, developed using the herbicides, 2,4,5-trichlorophenoxyacetic acid
 (2,4,5-T) and triclopyr, resp. An enzyme conjugate based on
 2,4,5-trichlorophenol provided most sensitive and specific detection.
 Although the assays cross-reacted with the herbicides, they did not suffer
 from the major disadvantage of extremely strong cross-reaction with
 cyclo-diene organochlorines reported for a com. HCH assay. The most
 sensitive assay had a lower detection limit of 20 µg l⁻¹ in drinking
 water and was applied to water and soil matrixes.
 IT 93-76-5, 2,4,5-Trichlorophenoxyacetic acid
 RL: ANT (Analyte); ANST (Analytical study)
 (enzyme immunoassay for organochlorine insecticide
 hexachlorocyclohexane, through conversion to trichlorophenols)
 RN 93-76-5 HCAPLUS
 CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS
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L27 ANSWER 13 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:601721 HCAPLUS

DOCUMENT NUMBER: 133:306407

TITLE: Simplified urinary **immunoassay** for 2,4-D:
 validation and exposure assessment

AUTHOR(S): Lyubimov, Alexander V.; Garry, Vincent F.; Carlson,
 Robert E.; Barr, Dana B.; Baker, Samuel E.

CORPORATE SOURCE: Laboratory of Environmental Medicine, University of
 Minnesota Medical School, Minneapolis, MN, 55414, USA

SOURCE: Journal of Laboratory and Clinical Medicine (
 2000), 136(2), 116-124

CODEN: JLCMAK; ISSN: 0022-2143

PUBLISHER: Mosby, Inc.

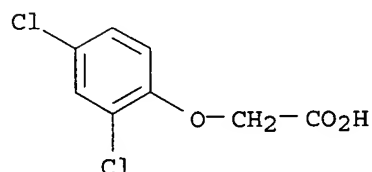
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Urinary monitoring of exposed workers by either analytic chemical methods or
RIA suggests that urinary levels of 2,4-dichlorophenoxyacetic acid
 (2,4-D) exceeding 30 ppb are indicative of occupational exposure.
 However, the current methods do not lend themselves to clin. laboratory use in

the rural medical setting. The major goal of this project was to provide medical practitioners who care for members of the agricultural community with a cost-efficient way to conduct exposure assessment. This project used a direct 2,4-D **enzyme immunoassay** (EIA) and measurement of the ratio between 2,4-D-spiked and non-spiked samples of the same urine to quantify 2,4-D levels. This simplified approach minimizes the effects of non-specific interfering substances in urine and eliminates the need for sample extraction and clean-up. Possible urine co-contaminants (2,4-dichlorophenol and 2,5-dichlorophenol) do not significantly interfere with this **immunoassay**. Twenty-two forest pesticide applicators who apply and use chlorophenoxy herbicides in their work and 14 comparable control subjects were studied to validate the assay in the occupational setting. Coded urine specimens were examined for levels of 2,4-D by high-performance liquid chromatog.-tandem mass spectrometry (HPLC-MS/MS) and compared with **immunoassay** results from the same specimens. A correlation coefficient of $r = 0.982$ with a P value of 0.0001 for a plot of HPLC-MS/MS vs. **immunoassay** demonstrated that the results from these methods were comparable over urinary dose levels ranging from not detectable (<19 ppb) to 1700 ppb 2,4-D, as determined by **immunoassay**.

IT 94-75-7, 2,4-D, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (simplified urinary **enzyme immunoassay** for
 dichlorophenoxyacetate in humans in relation to validation and exposure
 assessment)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 14 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:310140 HCAPLUS

DOCUMENT NUMBER: 133:70121

TITLE: Supercritical fluid extraction coupled with
enzyme immunoassay analysis of soil
 herbicides

AUTHOR(S): Stearman, G. Kim

CORPORATE SOURCE: Center for the Management, Utilization and Protection
 of Water Resources, Tennessee Technological
 University, Cookeville, TN, USA

SOURCE: Methods in Biotechnology (2000),
 13(Supercritical Fluids), 89-93
 CODEN: MEBIFQ

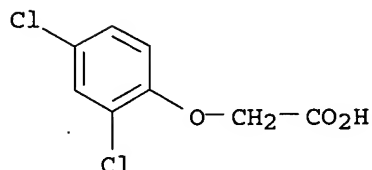
PUBLISHER: Humana Press Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Herbicides were extracted from soil by supercrit. fluid extraction with CO₂ and determined by **enzyme immunoassay**. The detection limits were 2.5 ng/g soil for atrazine and alachlor and 15 ng/g soil for simazine and 2,4-D. Recoveries were >80%, with <15% standard deviation.

IT 94-75-7, 2,4-D, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (supercrit. fluid extraction coupled with **enzyme**
immunoassay determination of soil herbicides)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 15 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:739460 HCAPLUS

DOCUMENT NUMBER: 132:75491

TITLE: **Immunosensors** based on supported lipid membranes, protein films and liposomes modified by **antibodies**

AUTHOR(S): Hianik, T.; Snejdarkova, M.; Sokolikova, L.; Meszar, E.; Krivanek, R.; Tvarozek, V.; Novotny, I.; Wang, J.

CORPORATE SOURCE: Department of Biophysics and Chemical Physics, Comenius University, Bratislava, 842 15, Slovakia

SOURCE: *Sensors and Actuators, B: Chemical* (1999), B57(1-3), 201-212

CODEN: SABCEB; ISSN: 0925-4005

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The comparison of phys. properties, sensitivity and reproducibility of various detection parameters of several newly developed affinity biosensors for determination of human IgE and herbicide 2,4-D is presented.

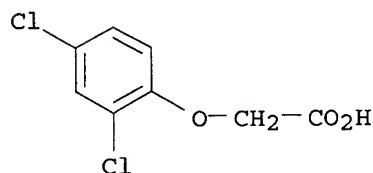
The protein film based biosensors were composed of **antibody** (swine anti-human IgE (Q-SwaHU/IgE) or monoclonal **antibody** (MAB) against herbicide 2,4-D) attached to thin gold support through cysteamine or cysteamine-bovine serum albumin. The **antigen** (Ag)-**antibody** (Ab) interaction was detected by measurement of conductivity. The detection limit for human IgE was .apprx.1 nM, however, the sign of response depends on the method of **antibody** attachment to the gold support. This type of design and detection method was not appropriate for detecting small mols., like 2,4-D. In the case of metal (stainless steel or gold) supported lipid films (s-BLM), the sensor was constructed by means of binding of avidin-modified **antibody** to s-BLM contained biotinylated phospholipids. Measurement of elec. capacitance, C, and elasticity modulus in direction perpendicular to the membrane plane, E_L, allowed to detect the Ag-Ab reaction, that resulted in decrease of C and increase of E_L. Most reproducible results have been obtained with lipid films supported on thin gold layers with detection limit of determination of 2,4-D.apprx.1 μM. The best reproducibility and sensitivity (0.1-1 nM) have been obtained in liposome **immunoassay**. The Ag-Ab reaction was monitored by means of measurement the changes of ultrasound velocity in liposome suspension.

IT 94-75-7, 2,4-D, analysis

RL: ANT (Analyte); ANST (Analytical study)
 (immunosenors based on supported lipid membranes, protein
 films and liposomes modified by antibodies)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 16 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:415873 HCAPLUS

DOCUMENT NUMBER: 131:77996

TITLE: A disposable immunomagnetic electrochemical
 sensor for the 2,4-dichlorophenoxyacetic acid
 herbicide

AUTHOR(S): Limoges, B.; Martre, A. M.; Dequaire, M.; Schollhorn,
 B.; Degrand, C.

CORPORATE SOURCE: Electrosynthese et Electroanalyse Bioorganique, UMR
 CNRS 6504, Universite Blaise Pascal de
 Clermont-Ferrand, Aubiere, 63177, Fr.

SOURCE: Proceedings - Electrochemical Society (1999
), 99-5(New Directions in Electroanalytical Chemistry
 II), 157-167

CODEN: PESODO; ISSN: 0161-6374

PUBLISHER: Electrochemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

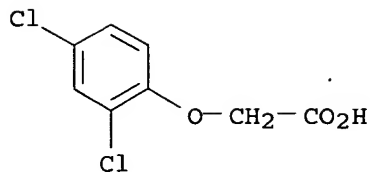
AB The competitive enzyme immunoassay of the 2,4-D was
 achieved with a detection limit <0.01 ppb by combining the convenient use
 of immunomagnetic beads with the sensitive determination of horseradish
 peroxidase (HRP) at a Nafion-modified screen-printed electrode
 (Nafion-SPE). The entire assay took place in a microwell-shaped
 electrochem. cell. The competitive immunoreaction (30 min)
 between the analyte and the HRP-analyte conjugate for a limited amount of
 antibodies-coated magnetic beads was followed by a magnetic separation
 and a washing step. During the enzyme reaction (30 min), the beads were
 magnetically localized on the Nafion-SPE, and the electroactive cationic
 product of the reaction between 4-aminoantipyrine and 2-(N-ethyl-m-
 toluidino)ethanol in the presence of hydrogen peroxide, was thus
 immediately entrapped by the anionic polymer film. The electrochem. assay
 was .apprx.70-fold more sensitive than in the case of a com. kit assay
 (colorimetric detection), and it involved 5-fold lower amts. of
 immunoreagents.

IT 94-75-7, 2,4-Dichlorophenoxyacetic acid, analysis

RL: ANT (Analyte); ANST (Analytical study)
 (disposable immunomagnetic electrochem. sensor for
 dichlorophenoxyacetic acid herbicide)

RN 94-75-7 HCAPLUS

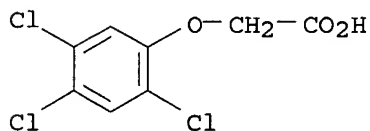
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



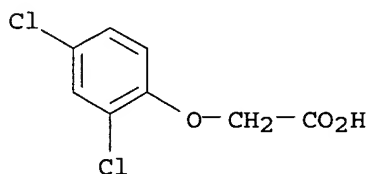
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 17 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1999:366508 HCAPLUS
 DOCUMENT NUMBER: 131:181026
 TITLE: Pesticide **immunodetection** systems
 AUTHOR(S): Dzantiev, B. B.; Zherdev, A. V.
 CORPORATE SOURCE: Inst. Biokhim. im A.N. Bakha, RAN, Moscow, 117071, Russia
 SOURCE: Agrokhimiya (1998), (10), 61-68
 CODEN: AGKYAU; ISSN: 0002-1881
 PUBLISHER: MAIK Nauka
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: Russian

AB A review with 28 refs., with an emphasis on the author's research on the optimization of **immunochem.** methods for the detection of pesticides (polychlorophenols, triazines, pyrethroids). Solid-phase and homogeneous **enzyme immunoassays, immunosensors** and **enzyme immunoassay** with water-soluble polymeric polyelectrolytes were discussed.
 IT 93-76-5, 2,4,5-Trichlorophenoxyacetic acid 94-75-7, 2,4-Dichlorophenoxyacetic acid, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (pesticide **immunodetection** systems)
 RN 93-76-5 HCAPLUS
 CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 18 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1999:350943 HCAPLUS
 DOCUMENT NUMBER: 131:151303

TITLE: Sensitivity enhancement of transducers for total internal reflection fluorescence

AUTHOR(S): Klotz, Albrecht; Barzen, C.; Brecht, Andreas; Harris, Richard D.; Quigley, G. R.; Wilkinson, James S.; Gauglitz, Guenter

CORPORATE SOURCE: Inst. Physical Chem., Eberhard-Karls-Univ. Tuebingen, Tuebingen, Germany

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1999), 3620(Integrated Optics Devices III), 345-354
CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

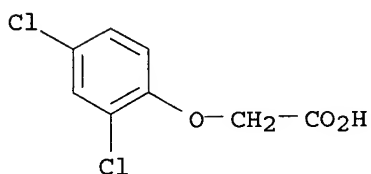
LANGUAGE: English

AB We have developed, modeled and optimized optical transducers for total internal reflection fluorescence (TIRF). The transducers are part of a compact and rugged **immuno**-anal. instrument designed for simultaneous detection of up to six analytes in aquatic samples (e.g. atrazine and 2,4-D). Binding inhibition assays, using Cy5.5 labeled **antibodies** to detect the target analytes, were carried out. Calibration curves with mid-points of tests <1 µg/l and detection limits <0.1 µg/l were achieved. As transducer either ion exchanged integrated optical channel waveguides or planar multimode slab waveguides were employed. The transducer performance was significantly enhanced by incorporating thin high index films at the waveguide surface and by applying high refractive index solns. in the superstrate. Peak signal enhancement factors of more than ten were observed and an increase in signal to noise ratio by a factor of more than four were achieved. Strong polarization dependent effects on the enhancement by high index films were found both theor. and exptl.

IT 94-75-7, 2,4 D, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**immunoassay** sensor using total internal reflection fluorescence)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 19 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:113044 HCAPLUS

DOCUMENT NUMBER: 130:321658

TITLE: Influence of **antibody** valency in a displacement **immunoassay** for the quantitation of 2,4-dichlorophenoxyacetic acid

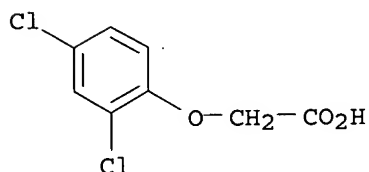
AUTHOR(S): Gerdes, Melanie; Meusel, Markus; Spener, Friedrich

CORPORATE SOURCE: Institut fur Chemo- und Biosensorik, Munster, D-48149, Germany

SOURCE: Journal of Immunological Methods (1999), 223(2), 217-226

as a crosslinking agent and used in a 2,4-dichlorophenoxyacetic acid (2,4-D) competitive electrochemiluminescent **immunosensor**. 2,4-D was covalently immobilized at a glassy C electrode surface, via a C6 spacer arm, by a novel procedure giving stable immobilized **antigens** that could be then stored dry, used, and regenerated 50 times without loss of binding capacity. The luminol electrochemiluminescence detection was performed in a flow injection anal. system. The optimum conditions were an oxidation potential of +500 mV vs. a Pt pseudo-reference electrode, in the presence of 600 μ M H₂O₂. In these conditions, luminol could be detected in the range 5.5 fmol - 55 nmol. Luminol-labeled anti-2,4-D **antibodies** or peroxidase-labeled secondary **antibodies** were tested for the 2,4-D **immunodetection**. With both the corresponding electrochemiluminescent and chemiluminescent **immunoassays** it was possible to detect 0.2 μ g free 2,4-D/L. The overall time of experiment was 50 min and a linear range of 0.2 μ g/L - 200 mg/L was obtained with the peroxidase format, whereas the range was 0.2-200 μ g/L with the luminol format.

IT 94-75-7, 2,4-Dichlorophenoxyacetic acid, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (electrochemiluminescence of luminol for 2,4-D optical
immunosensing in a flow injection anal. system)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 21 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1998:335065 HCAPLUS
 DOCUMENT NUMBER: 129:25391
 TITLE: Production of **haptens**-protein conjugates by means of transglutaminase
 INVENTOR(S): Spener, Friedrich; Meusel, Markus; Josten, Andre
 PATENT ASSIGNEE(S): Institut fuer Chemo- und Biosensorik Muenster e.V., Germany
 SOURCE: Ger. Offen., 10 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19647866	A1	19980520	DE 1996-19647866	19961119 <--
DE 19647866	C2	19990218		
PRIORITY APPLN. INFO.:			DE 1996-19647866	19961119
AB The invention concerns a simple synthesis of haptens -protein conjugates and haptens -polymer conjugates via transglutaminase and their application for immunoassays and biosensors. The				

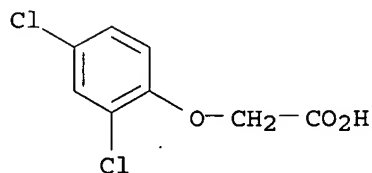
PUBLISHER: CODEN: JIMMBG; ISSN: 0022-1759
Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The influence of **antibody** valency in a displacement **immunoassay** was investigated by comparing the whole **antibody** mol. with the corresponding Fab-fragment. The displacement **immunoassay** for the herbicide 2,4-dichlorophenoxyacetic acid (2,4-D) takes advantage of the cross-reactivity of monoclonal anti-2,4-D **antibodies** and the Fab-fragments toward immobilized 2-methyl-4-chlorophenoxyacetic acid (MCPA). Due to the low affinity of the **antibodies** toward MCPA (cross-reactivity of approx. 30%), the addition of 2,4-D resulted in a displacement of the **antibodies** or the fragments. The detection limits obtained with whole anti-2,4-D **antibodies** and Fab-fragments were 0.1 µg/L and 0.01 µg/L 2,4-D, resp. The whole **antibodies** and the Fab-fragments show similarities, such as the cross-reactivity toward MCPA (26% and 33%), and some characteristics of the calibration curve, for example the large detection range and the sensitivity. In contrast to the bivalent **antibodies**, however, increasing the **hapten** /protein ratios of the immobilized MCPA-BSA conjugates did not affect the detection limit when using the Fab-fragments. Moreover, kinetic expts. reveal a faster displacement reaction with the Fab-fragments. A disadvantage of using the Fab-fragments is the generation of lower absorbance values in the ELISA.

IT 94-75-7, 2,4-Dichlorophenoxyacetic acid, analysis
RL: ANT (Analyte); ANST (Analytical study)
(influence of **antibody** valency in a displacement **immunoassay** for quantitation of dichlorophenoxyacetic acid)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 20 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:815685 HCAPLUS

DOCUMENT NUMBER: 130:293529

TITLE: Electrochemiluminescence of luminol for 2,4-D optical **immunosensing** in a flow injection analysis system

AUTHOR(S): Marquette, Christophe A.; Blum, Loic J.

CORPORATE SOURCE: Lab. Genie Enzym., Univ. Claude Bernard, Villeurbanne, 69622, Fr.

SOURCE: Sensors and Actuators, B: Chemical (1998), B51(1-3), 100-106

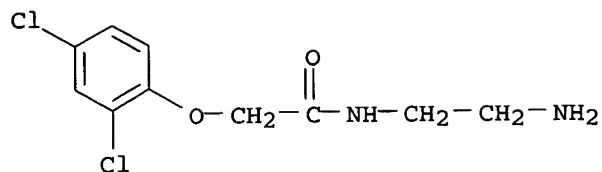
CODEN: SABCEB; ISSN: 0925-4005

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

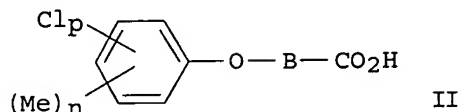
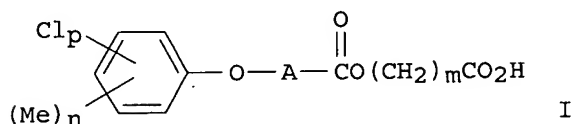
AB Luminol-labeled **antibodies** have been prepared using glutaraldehyde



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER (22 OF 50) HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1998:239541 HCAPLUS
 DOCUMENT NUMBER: 129:40159
 TITLE: Phenoxyacetic acids, their macromolecular conjugates, **antibodies** to the conjugates, hybridomas producing the **antibodies**, and **immunoassay** using the **antibodies**
 INVENTOR(S): Kawada, Mitsuyasu; Moriso, Kosuke; Takewaki, Shunichi; Miyake, Shiro; Yamaguchi, Yuki
 PATENT ASSIGNEE(S): Kankyo Meneki Gijutsu Kenkyusho K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

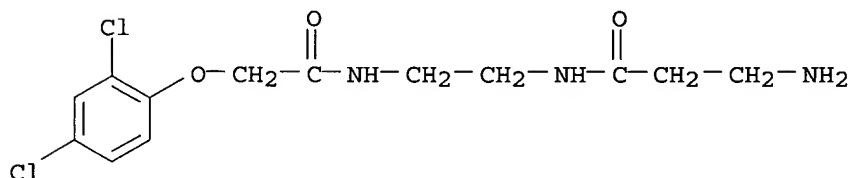
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10101615	A2	19980421	JP 1996-254777	19960926 <--
PRIORITY APPLN. INFO.:			JP 1996-254777	19960926
OTHER SOURCE(S):	MARPAT 129:40159			
GI				



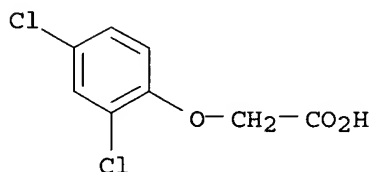
AB Phenoxyacetic acids I (A = linear or branched C1-3 alkylene; m = 1-10; n, p = 0-3) are conjugated with macromol. compds., and the conjugates are used as **antigens** for production of **antibodies** (including fragments) reactive with II [B = CH2, CH2:CH2, (CH2)3; n, p = same as above]. Also claimed are an **antibody** named TCA28-50, hybridomas, e.g. FERM P-15848, producing the above **antibodies**, and an **immunoassay** method for determining II using the **antibodies**. A mouse was immunized with conjugates of 2,4,5-Cl3C6H2OCH2CO2(CH2)3CO2H (preparation given) with **keyhole limpet hemocyanin**, and splenocyte from the mouse was

hapten is a low mol. weight compound with amino group(s) or a compound that has been amino functionalized, e.g. 2,4-dichlorophenoxyacetic acid. Transglutaminase is of bacterial origin, proteins used are casein, **bovine serum albumin** or hemocyanin. Polymers are synthetic lysine or glutamine based polypeptides or aliphatic polymers with amino or glutamine groups. Immobilized proteins and polymers can be used as well. Thus **hapten**, transglutaminase, protein or polymer are mixed and incubated on the surface of a microtiter plate or a biosensor, rinsed and used in an ELISA test or as a biosensor.

IT **207905-78-0DP**, conjugate with protein or polymer
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
 (production of **hapten**-protein conjugates by means of transglutaminase)
 RN 207905-78-0 HCAPLUS
 CN Propanamide, 3-amino-N-[2-[(2,4-dichlorophenoxy)acetyl]amino]ethyl]- (9CI) (CA INDEX NAME)



IT **94-75-7**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (production of **hapten**-protein conjugates by means of transglutaminase)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



IT **49808-81-3P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (production of **hapten**-protein conjugates by means of transglutaminase)
 RN 49808-81-3 HCAPLUS
 CN Acetamide, N-(2-aminoethyl)-2-(2,4-dichlorophenoxy)- (9CI) (CA INDEX NAME)

fused with P3-X63-Ag myeloma cells to give a hybridoma named TCA28-50 (FERM P-15848) producing monoclonal **antibody** TCA28-50 reactive with 2,4,5-T. Sensitivity of indirect competitive ELISA for 2,4,5-T using the monoclonal **antibody** was not much affected by MeOH at the concentration $\leq 40\%$.

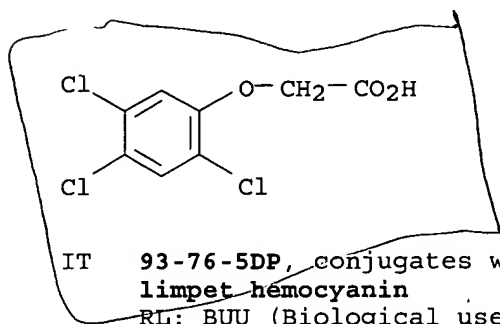
IT 93-76-5

RL: ANT (Analyte); POL (Pollutant); ANST (Analytical study); OCCU (Occurrence)

(immunoassay of herbicide 2,4,5-T using **antibodies** produced using macromol. conjugates of **haptenic** phenoxyacetic acids)

RN 93-76-5 HCAPLUS

CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



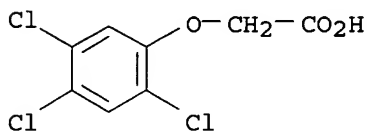
IT 93-76-5DP, conjugates with BSA or keyhole limpet hemocyanin

RL: BUU (Biological use, unclassified); PNU (Preparation, unclassified); BIOL (Biological study); PREP (Preparation); USES (Uses)

(immunoassay of herbicide 2,4,5-T using **antibodies** produced using macromol. conjugates of **haptenic** phenoxyacetic acids)

RN 93-76-5 HCAPLUS

CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)

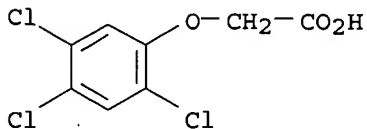


IT 37785-57-2

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of **haptenic** phenoxyacetic acids for production of **antibodies** used in immunoassay of herbicide 2,4,5-T)

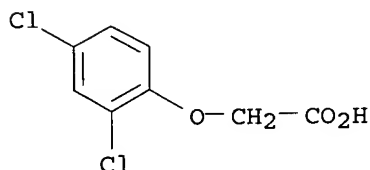
RN 37785-57-2 HCAPLUS

CN Acetic acid, (2,4,5-trichlorophenoxy)-, potassium salt (9CI) (CA INDEX NAME)



● K

L27 ANSWER 23 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:696301 HCAPLUS
 DOCUMENT NUMBER: 127:350868
 TITLE: Detection of 2,4-dichlorophenoxyacetic acid using a fluorescence **immunoanalyzer**
 AUTHOR(S): Rogers, Kim R.; Kohl, Steven D.; Riddick, Lee A.; Glass, Thomas
 CORPORATE SOURCE: US Environmental Protection Agency, National Exposure Research Laboratory, Las Vegas, NV, 89193, USA
 SOURCE: Analyst (Cambridge, United Kingdom) (1997), 122(10), 1107-1111
 CODEN: ANALAO; ISSN: 0003-2654
 PUBLISHER: Royal Society of Chemistry
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A flow **immunoassay** method for the measurement of 2,4-dichlorophenoxyacetic acid (2,4-D) was developed. The competitive **fluorescence immunoassay** relies on the use of **antibody-** or **antigen-**coated poly(Me methacrylate) particles (98 µm diameter) as a renewable solid phase. The assay exhibits a dynamic range of 0.1-100 µg L⁻¹ using a monoclonal **antibody** or alternatively 10 µg L⁻¹ to 10 mg L⁻¹ using com. available antiserum. The assay is demonstrated in buffered saline solution as well as in aquatic environmental media. The relative errors for the environmental matrixes were similar to those for the buffer control. The precision of concentration values calculated at 1 mg L⁻¹ (for the assay using antiserum) were ±0.28, ±0.27 and ±0.43 mg L⁻¹ for the buffer, well water and river water matrixes, resp. The method shows cross-reactivity with compds. of closely related structure but little cross-reactivity with compds. dissimilar in structure to 2,4-D. The proposed automated competitive **immunoassay** method is rapid (between 7 and 15 min per assay), simple and potentially portable.
 IT 94-75-7, Acetic acid, (2,4-dichlorophenoxy)-, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detection of 2,4-dichlorophenoxyacetic acid in water using fluorescence **immunoanalyzer**)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

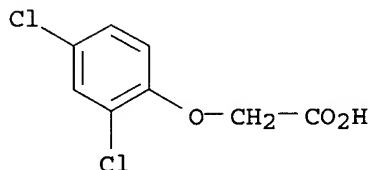
L27 ANSWER 24 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:641951 HCAPLUS
 DOCUMENT NUMBER: 127:258883
 TITLE: Development of a displacement **immunoassay** by exploiting cross-reactivity of a monoclonal **antibody**
 AUTHOR(S): Gerdes, Melanie; Meusel, Markus; Spener, Friedrich
 CORPORATE SOURCE: Inst. Chemo- Biosensorik, Munster, D-48149, Germany

SOURCE: Analytical Biochemistry (1997), 252(1), 198-204
 CODEN: ANBCA2; ISSN: 0003-2697
 PUBLISHER: Academic
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB An ELISA-based displacement assay was developed for the determination of 2,4-D. Advantage was taken of the cross-reactivity of a monoclonal anti-2,4-D antibody toward MCPA. MCPA was conjugated with bovine serum albumin (BSA), immobilized on the surface of a microtiter plate, and saturated with the anti-2,4-D antibody. Due to the low affinity of the antibody toward MCPA (cross-reactivity of approx. 30%), the addition of 2,4-D resulted in a displacement of the antibody. Remaining antibodies were subsequently detected using a peroxidase-labeled goat anti-mouse antibody. The detection limit was as low as 0.1 µg/L for 2,4-D, which complies with the European Union Drinking Water Directives. When 2,4-D-BSA was used instead of MCPA-BSA conjugates, no significant displacement of bound antibody was observed

IT 94-75-7, 2,4-D, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (immunoassay of 2,4-D by exploiting cross-reactivity of monoclonal antibody)

RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER (25) OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:182717 HCAPLUS
 DOCUMENT NUMBER: 126:268216
 TITLE: Amperometric immunosensor for the detection of 2,4-dichlorophenoxyacetic acid (2,4-D) in water
 AUTHOR(S): Wilmer, Marianne; Trau, Dieter; Renneberg, Reinhard; Spener, Friedrich
 CORPORATE SOURCE: Institut für Chemo- und Biosensorik, Münster, D - 48 149, Germany
 SOURCE: Analytical Letters (1997), 30(3), 515-525
 CODEN: ANALBP; ISSN: 0003-2719
 PUBLISHER: Dekker
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB An amperometric immunosensor for the determination of the herbicide 2,4-dichlorophenoxyacetic acid (2,4-D) in water has been developed using sequential injection anal. techniques. The system is based on a rapid competitive enzyme immunoassay employing an alkaline phosphatase-labeled monoclonal antibody directed against the herbicide and an immunoreactor with 2,4-D immobilized via bovine serum albumin either to Eupergit in a

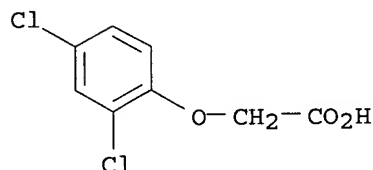
column or directly to the surface of a glass capillary. The detection limit of the **immunosensor** at 0.1 µg 2,4-D/L without enrichment of the analyte makes automatic measurements of 2,4-D in drinking and groundwater feasible.

IT 94-75-7, 2,4-D, analysis

RL: ANT (Analyte); ANST (Analytical study)
(amperometric **immunosensor** for detection of
2,4-dichlorophenoxyacetic acid in water)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER (26) OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:134992 HCAPLUS

DOCUMENT NUMBER: 126:141770

TITLE: High-sensitivity **enzyme immunoassay**
for determining **haptens** and **antigens**

INVENTOR(S): Bauer, Christian; Makower, Alexander; Scheller,
Frieder; Bier, Frank

PATENT ASSIGNEE(S): Scheller, Frieder, Germany

SOURCE: Ger. Offen., 7 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

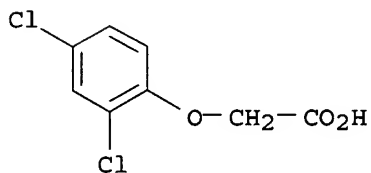
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

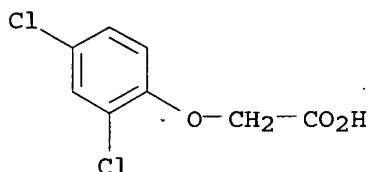
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19545974	A1	19970116	DE 1995-19545974	19951209 <--
DE 19545974	C2	20000615		
PRIORITY APPLN. INFO.:			DE 1995-19545974	A1 19951209
			DE 1995-19525899	19950715

AB The title **EIA** is characterized by using a partner of an immune binding reaction (e.g., an **antibody**) labeled with a marker enzyme, a substrate for the marker enzyme, and an enzyme amplification system. Some marker enzymes are β -galactosidase, alkaline or acid phosphatase, cholinesterase, carboxy esterase, or sulfatase, and the substrates used are esters or ethers of phenol or catechol or their derivs. The enzyme amplification system consists of a combination of tyrosinase and NADH-independent glucose dehydrogenase or of tyrosinase and oligosaccharide dehydrogenase in a biosensor membrane for the determination of phenol or catechol. The **EIA** can be used for the determination of low-mol.-weight **haptens** (e.g., herbicides, steroid hormones, or drugs) by competitive assay or **immunoenzymometric** assay and for the determination of high-mol.-weight **antigens** (e.g., tumor markers, nucleic acids, cells) by double-**antibody** methods in which case the secondary **antibody** is conjugated with the marker enzyme either covalently or noncovalently. Examples are given of the determination of human TSH by using β -galactosidase as marker enzyme and the substrate phenyl- β -galactoside and the determination of 2,4-D by using alkaline phosphatase

as marker enzyme and Ph phosphate as substrate.
 IT 94-75-7, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (high-sensitivity **enzyme immunoassay** for determining
haptens and antigens)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



IT 94-75-7DP, alkaline phosphatase conjugates
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST
 (Analytical study); PREP (Preparation); USES (Uses)
 (high-sensitivity **enzyme immunoassay** for determining
haptens and antigens)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 27 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:101908 HCAPLUS
 DOCUMENT NUMBER: 126:216288
 TITLE: Comparison of **immunoassay** to high-pressure
 liquid chromatography and gas chromatography-mass
 spectrometry analysis of pesticides in surface water
 AUTHOR(S): Selim, M. I.; Achutan, C.; Starr, J. M.; Jiang, T.;
 Young, B. S.
 CORPORATE SOURCE: Inst. Rural Environmental Health, Univ. Iowa, Iowa
 City, IA, 52242-5000, USA
 SOURCE: ACS Symposium Series (1997),
 657(Immunochemical Technology for Environmental
 Applications), 234-244
 CODEN: ACSMC8; ISSN: 0097-6156
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB This study was designed to evaluate the performance of EnviroGard
immunoassay kits for the field anal. of pesticides in surface
 waters in Malaysia. The primary objective was to determine possible effects of
 the surface water matrix or environmental conditions on the sensitivity or
 reliability of the EnviroGard **immunoassay** kits. The kits used
 in this study were: alachlor, triazines, diazinon, cyclodienes, paraquat,
 and 2,4-dichlorophenoxyacetic acid. Field work consisted of
enzyme immunoassay (EIA) of surface water

samples using the EnviroGard plate kits in conjunction with a millipore Microwell strip reader. Split samples of surface waters, blanks, and spikes were processed in the field using solid phase extraction (SPE) disks (C8 or C18) and transported to University Iowa, where extracted pesticides were eluted

and analyzed using high pressure liquid chromatog. (HPLC) and gas chromatog./mass spectrometry (GC/MS). HPLC and GC/MS data were corrected for pesticide recovery and stability on the C8 or C18 during transit. Good agreement was obtained between the field EIA and laboratory HPLC or GC/MS anal. of field spiked samples for all kits with the exception of paraquat. The results of this study indicate that the EnviroGard **enzyme immunoassay** is an efficient and reliable field testing tool for pesticides in water.

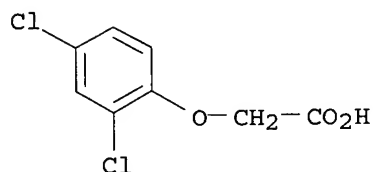
IT 94-75-7, 2,4-D, analysis

RL: ANT (Analyte); POL (Pollutant); ANST (Analytical study); OCCU (Occurrence)

(comparison of **immunoassay** to HPLC and GC-mass spectrometry anal. of pesticides in surface water)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 28 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:101864 HCAPLUS

DOCUMENT NUMBER: 126:140887

TITLE: Development of various enzyme **immunotechniques** for pesticide detection

AUTHOR(S): Dzantiev, B. B.; Zherdev, A. V.; Romanenko, O. G.; Trubaceva, J. N.

CORPORATE SOURCE: A. N. Bach Inst. Biochemistry, Russian Academy Sciences, Moscow, 117071, Russia

SOURCE: ACS Symposium Series (1997), 657(Immunochemical Technology for Environmental Applications), 87-96

CODEN: ACSMC8; ISSN: 0097-6156

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

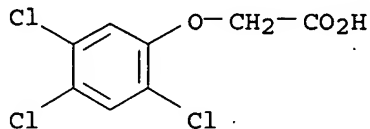
AB Different enzyme **immunotechniques** were developed for 2,4-D, 2,4,5-T, simazine, atrazine, permethrin, phenothrin and derivs. The sensitivities obtained using solid-phase techniques, such as ELISA, varied from 0.02 to 8 ng/mL, and the assay duration ranged from 1 to 2 h. A very homogeneous assay technique based on the inhibition of the catalytic activity of amylase-pesticide conjugate by anti-pesticide **antibodies** was examined. Two types of **immunosensors** that could measure 2,4-D and 2,4,5-T for 12 min, with sensitivities close to ELISA, were also developed. Furthermore, a new visual membrane **immunoassay** based on polycation-polyanion interaction is proposed. The latter allows detection of 2,4-D up to 10 ng/mL and is useful for on-site anal.

IT 93-76-5, 2,4,5-T 94-75-7, 2,4-D, analysis

RL: ANT (Analyte); ANST (Analytical study)
(enzyme immunotechniques for pesticide detection)

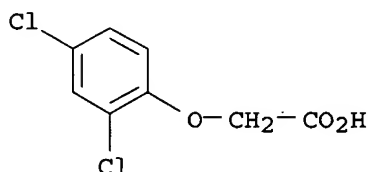
RN 93-76-5 HCAPLUS

CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 29 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:683538 HCAPLUS

DOCUMENT NUMBER: 125:320401

TITLE: **Enzyme immunoassay** analysis
coupled with supercritical fluid extraction of soil
herbicides

AUTHOR(S): Stearman, G. Kim; Wells, Martha J. M.; Adkisson, Scott
M.; Ridgill, Tadd E.

CORPORATE SOURCE: Center Management, Utilization and Protection Water
Resources, Tennessee Technological Univ., Cookeville,
TN, 38505, USA

SOURCE: ACS Symposium Series (1996),
646 (Environmental Immunochemical Methods), 56-64
CODEN: ACSMC8; ISSN: 0097-6156

PUBLISHER: American Chemical Society

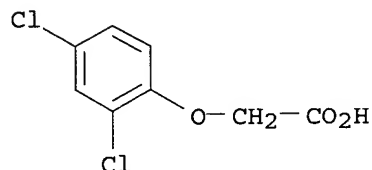
DOCUMENT TYPE: Journal

LANGUAGE: English

AB **Enzyme immunoassay** anal. (EIA) was coupled
with supercrit. fluid extraction (SFE) for the determination of 2,4-D,
simazine,

atrazine and alachlor in soil. Five soils, ranging in texture from sandy loam to silty clay, were fortified with 500 ng/g herbicide, allowed to air dry, and extracted using supercrit. fluid or liquid vortex extraction. Field-weathered soils with incurred residues were also extracted. EIA of herbicides using a microtiter plate format were in good agreement with GC or HPLC results (mean r² of 0.95). SFE was performed using a Dionex model 703 extractor in the dynamic mode at 200 atm and 66° for 3 min, followed by 340 atm extraction for 17 min. SFE recoveries with unmodified CO₂ were 7, 56, 57, and 83%, resp., for 2,4-D, simazine, atrazine and alachlor. Recoveries improved to 101, 79, 90, and 88% for 2,4-D, simazine, atrazine and alachlor, resp., by adding an acetone-water-triethylamine modifier (90:10:1.5, volume/volume/volume). Collection of analytes by SFE was improved by using C18 solid-phase traps (90% recovery) compared to liquid acetone collection (65% recovery). There were

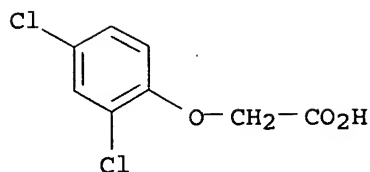
differences in extraction recoveries based on soil type.
 IT 94-75-7, 2,4-D, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (Enzyme immunoassay anal. coupled with supercrit.
 fluid extraction of soil herbicides)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



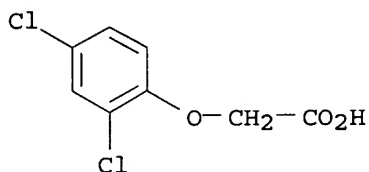
L27 ANSWER 30 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1996:572099 HCAPLUS
 DOCUMENT NUMBER: 125:222464
 TITLE: Preparation of **hapt**en-carrier conjugates
 containing polyaminoacids as carriers.
 INVENTOR(S): Schecklies, Elvira
 PATENT ASSIGNEE(S): Germany
 SOURCE: Ger., 8 pp.
 CODEN: GWXXAW
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19529250	C1	19960814	DE 1995-19529250	19950809 <--
PRIORITY APPLN. INFO.:			DE 1995-19529250	19950809

AB **Hapt**en-carrier conjugates with high and defined coupling rates
 chosen from polyaminoacids conjugated with (succinic-acid derivatized)
 patulin, ochratoxin A, prostaglandin E2, 2,4-dichlorophenoxyacetic acid,
 4-chloro-2-methylphenoxyacetic acid, 4-(4-chloro-2-methylphenoxy)butyric
 acid, N-phenylurea, O6-methyl-2'-desoxyguanosine, and leukotrienes, are
 claimed. Polylysine (units of mol. weight 10,000) bound 15 mols. of
 ochratoxin A, vs. 3 for **bovine serum albumin**
 ; the polylysine conjugate was 4 times as sensitive to anti-ochratoxin A
antibodies as the **BSA** conjugate.
 IT 94-75-7DP, 2,4-Dichlorophenoxyacetic acid, conjugates with
 polyaminoacids
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological
 study, unclassified); BUU (Biological use, unclassified); SPN (Synthetic
 preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (preparation of **hapt**en-carrier conjugates containing polyamino acids
 as carriers)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)

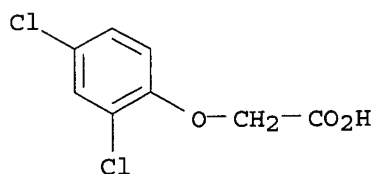


L27 ANSWER 31 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1996:561135 HCAPLUS
 DOCUMENT NUMBER: 125:214696
 TITLE: Determination of 2,4-D using monoclonal **antibodies** and biotin-streptavidin detection system
 AUTHOR(S): Pavlova, I. S.; Lyubavina, I. A.; Lukin, Yu. V.
 CORPORATE SOURCE: Shemyakin-Ovchinnikov Inst. of Bioorganic Chemistry, Moscow, 117871, Russia
 SOURCE: Bioorganicheskaya Khimiya (1996), 22(4), 269-272
 CODEN: BIKHD7; ISSN: 0132-3423
 PUBLISHER: MAIK Nauka
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian
 AB A simple method to determine 2,4-D, using biotinylated monoclonal **antibodies** in combination with a highly active streptavidin-peroxidase conjugate was developed on the basis of the **immunofiltration** dot assay and competitive **enzyme immunoassay** (EIA). The detection limit of 2,4-D acid for **immunofiltration** and EIA was 2-3 ng/mL.
 IT 94-75-7, 2,4-D, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of 2,4-D using monoclonal **antibodies** and biotin-streptavidin detection system)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 32 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1996:253133 HCAPLUS
 DOCUMENT NUMBER: 125:66915
 TITLE: Rapid **enzyme-immunoassay** for the detection of 2,4-dichlorophenoxyacetic acid (2,4-D) in water using monoclonal **antibodies**
 AUTHOR(S): Wilmer, Marianne; Renneberg, Reinhard; Spener, Friedrich
 CORPORATE SOURCE: Inst. Chemo-Biosensorik, Muenster, D-48149, Germany
 SOURCE: Vom Wasser (1996), 86, 83-93
 CODEN: VJWWAU; ISSN: 0083-6915
 PUBLISHER: VCH

DOCUMENT TYPE: Journal
 LANGUAGE: German
 AB An **enzyme immunoassay** for the rapid detection of 2,4-dichlorophenoxyacetic acid (2,4-D) in drinking water was developed. The competitive assay configuration is based on the use of an anti-2,4-D monoclonal **antibody** in a cocktail-test format. The test can either be used in the ELISA or in the ELIFA (enzyme-linked **immunosorbent** flow assay) configuration. The test takes 20 min for the determination of 24 samples and has a detection limit is 0.05 µg/L.
 IT 94-75-7, 2,4-D, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (rapid **enzyme-immunoassay** for 2,4-dichlorophenoxyacetic acid determination in drinking water with monoclonal **antibodies**)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 33 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1996:71940 HCAPLUS
 DOCUMENT NUMBER: 124:109590
 TITLE: Electrochemical **immunosensors** for determination of the pesticides 2,4-dichlorophenoxyacetic and 2,4,5-trichlorophenoxyacetic acids
 AUTHOR(S): Dzantiev, B. B.; Zherdev, A. V.; Yulaev, M. F.; Sitdikov, R. A.; Dmitrieva, N. M.; Moreva, I. Yu.
 CORPORATE SOURCE: Immunobiochemistry Laboratory, A.N. Bach Institute of Biochemistry (Russian Academy of Sciences), Moscow, 117071, Russia
 SOURCE: Biosensors & Bioelectronics (1996), 11(1/2), 179-85
 CODEN: BBIOE4; ISSN: 0956-5663
 PUBLISHER: Elsevier Advanced Technology
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Two **immunochem.** sensors are described for detection of the pesticides 2,4-dichlorophenoxyacetic acid (2,4-D) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-T). The assay monitors the competitive binding of free pesticide and pesticide-peroxidase conjugate with **antibodies** immobilized on a graphite electrode, by measurement of peroxidase activity in the immune complexes on the electrode surface. 5-Aminosalicylic acid and H2O2 are used as substrates. An automated potentiometric device measures changes in redox potential during the peroxidase reaction. The assay parameters were optimized to achieve detection limits of 40 ng/mL 2,4-D and 50 ng/mL 2,4,5-T (in both water and serum). The total time required to perform the assay (including electrode regeneration) was 12 min, compared to about 2 h for solid-phase **enzyme immunoassays**. The electrode life extends to 60 sequential measurements. The sensors therefore appear suitable for medical and ecol. applications.

extraction for 17 min. SFE recoveries with unmodified CO₂ were 7, 56, 57, and 83%, resp., for 2,4-D, simazine, atrazine and alachlor. Recoveries improved to 101, 79, 90, and 88% for 2,4-D, simazine, atrazine and alachlor, resp., by adding 1.5 mL of triethylamine to a 100 mL acetone-water (9 + 1) modifier. Collection of analytes by SFE was improved by using C18 solid-phase traps (90% recovery) compared to liquid acetone collection results (65% recovery).

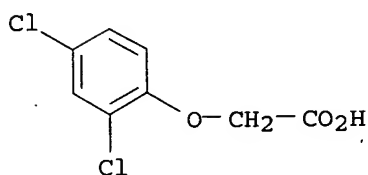
IT 94-75-7, 2,4-D, analysis

RL: ANT (Analyte); POL (Pollutant); ANST (Analytical study); OCCU (Occurrence)

(supercrit. fluid extraction coupled with enzyme immunoassay anal. of soil)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 35 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:562387 HCAPLUS

DOCUMENT NUMBER: 122:322050

TITLE: Fluorescence-polarization immunoassay of the herbicide 2,4,5-trichlorophenoxyacetic acid

AUTHOR(S): Eremin, S. A.; Melnichenko, O. A.; Tumanov, A. A.; Sorokina, N. V.; Molokova, E. V.; Egorov, A. M.

CORPORATE SOURCE: M. V. Lomonosov State Univ., Moscow, Russia

SOURCE: Voprosy Meditsinskoi Khimii (1994), 40(4), 57-60

CODEN: VMDKAM; ISSN: 0042-8809

PUBLISHER: Meditsina

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Immunol. reagents were produced and a polarog.

fluorescent immunoassay was developed for the determination of residues of 2,4,5-trichlorophenoxyacetic acid in wastewater and other environmental samples. The procedure is simple, accurate, and specific and permits the anal. of 10 samples in 7 min. The sample volume is 50 µL and the limit of determination is 0.5 µg/mL.

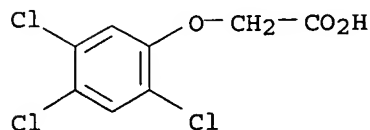
IT 93-76-5, 2,4,5-Trichlorophenoxyacetic acid

RL: ANT (Analyte); ANST (Analytical study)

(fluorescence-polarization immunoassay of 2,4,5-T)

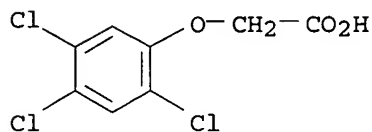
RN 93-76-5 HCAPLUS

CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)

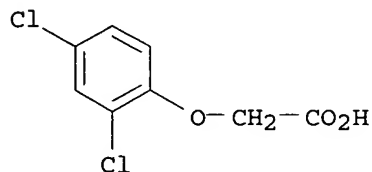


IT 163405-35-4P

IT 93-76-5, 2,4,5-Trichlorophenoxyacetic acid 94-75-7,
2,4-Dichlorophenoxyacetic acid, analysis
RL: ANT (Analyte); ANST (Analytical study)
(electrochem. **immunosensors** for determination of)
RN 93-76-5 HCAPLUS
CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)

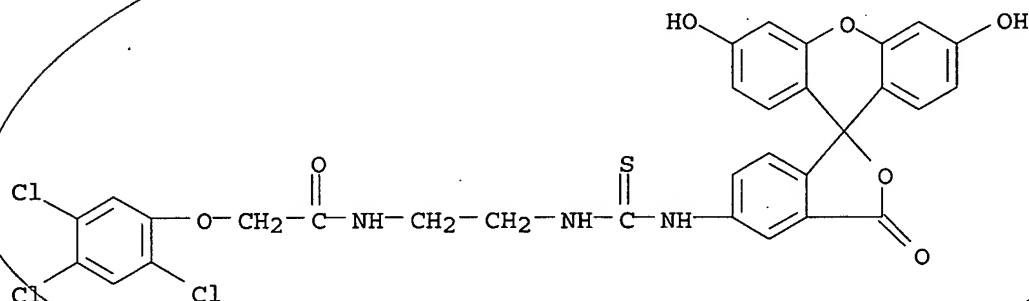


L27 ANSWER 34 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:897179 HCAPLUS
DOCUMENT NUMBER: 123:278585
TITLE: Supercritical fluid extraction coupled with
enzyme immunoassay analysis of soil
herbicides
AUTHOR(S): Stearman, G. Kim; Wells, Martha J. M.; Adkisson, Scott
M.; Ridgill, Tadd E.
CORPORATE SOURCE: Center Management Utilization Protection Water
Resources, Tennessee Technological University,
Cookeville, TN, 38505, USA
SOURCE: Analyst (Cambridge, United Kingdom) (1995),
120(10), 2617-21
CODEN: ANALAO; ISSN: 0003-2654
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Supercrit. fluid extraction (SFE) was coupled with **enzyme
immunoassay** anal. (EIA) for the anal. of the following
herbicides, 2,4-phenoxyacetic acid (2,4-D), 2-chloro-4,6-bis(ethylamino)-s-
triazine (simazine), 2-chloro-4-ethylamino-6-propylamino-s-triazine
(atrazine) and 2-chloro-2',6'-diethyl-N-(methoxymethyl)acetanilide
(alachlor) in soil and compared with liquid vortex extraction (LVE). Five
soils,
ranging in texture from sandy loam to silty clay were fortified with 500
ng g⁻¹ of herbicide, allowed to air dry, and extracted using supercrit. fluid
or LVE. Atrazine and alachlor were also fortified at 50 ng g⁻¹.
Field-weathered soils, with incurred residues from field application, were
also extracted **EIA** of herbicides using a microtiter plate format
were in good agreement with GC and HPLC results (r² = 0.95). SFE was
performed using a Dionex (Sunnyvale, CA, USA) Model 703 extractor in the
dynamic mode at 20.3 MPa and 66°C for 3 min, followed by 34.4 MPa

RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(fluorescence-polarization **immunoassay** of 2,4,5-T)

RN 163405-35-4 HCAPLUS

CN Acetamide, N-[2-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]amino]ethyl]-2-(2,4,5-trichlorophenoxy)- (9CI) (CA INDEX NAME)



L27 ANSWER 36 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995-303799 HCAPLUS

DOCUMENT NUMBER: 122:74475

TITLE: Solid-phase **enzyme immunoassays** of the herbicides 2,4-dichlorophenoxyacetic and 2,4,5-trichlorophenoxyacetic acids

AUTHOR(S): Dzantiev, B. B.; Zherdev, A. V.; Moreva, I. Yu.; Romanenko, O. G.; Sapegova, L. A.; Eremin, S. A.

CORPORATE SOURCE: Bach Institute of Biochemistry, Moscow State University, Moscow, Russia

SOURCE: Prikladnaya Biokhimiya i Mikrobiologiya (1994), 30(6), 931-9

CODEN: PBMIAK; ISSN: 0555-1099

PUBLISHER: MAIK Nauka

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Competitive solid-phase **enzyme immunoassays** for the detection of 2,4-D and 2,4,5-T have been developed and optimized. The sensitivity of the assay is 3 ng/mL for 2,4-D and 5 ng/mL for 2,4,5-T. The time of the assay is 1.5 h. The sensitivity of the assays increases after immobilization of **antibodies** on Staphylococcus protein A, in the case of using monovalent derivs. of **antibodies**, and as a result of chemical modification of **hapten**. The detection limit for the pesticides is 0.1 ng/mL in this case, which is close to the sensitivity of the assay for the **haptens** conjugated with proteins.

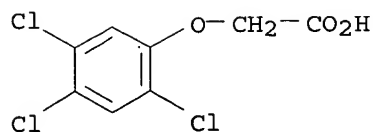
IT 93-76-5, 2,4,5-T 94-75-7, 2,4-D, analysis

RL: ANT (Analyte); ANST (Analytical study)

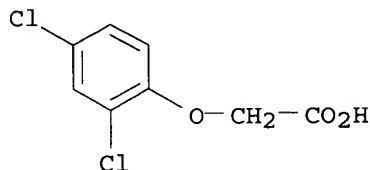
(solid-phase **enzyme immunoassays** of chlorophenoxyacetate herbicides)

RN 93-76-5 HCAPLUS

CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER (37 OF 50) HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:290702 HCAPLUS

DOCUMENT NUMBER: 122:131588

TITLE: Rapid screening of fruit juices and water supplies for contamination by 2,4-D using an **enzyme immunoassay**

AUTHOR(S): McMorris, C. J.; McConnell, R. I.; Lamont, J. V.; Fitzgerald, S. P.

CORPORATE SOURCE: Radox Laboratories Ltd, Antrim, BT29 4QY, UK

SOURCE: Food and Agricultural Immunology (1994), 6(3), 261-6

CODEN: FAIMEZ; ISSN: 0954-0105

PUBLISHER: Carfax

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An ELISA (ELISA) for 2,4-dichlorophenoxy acetic acid (2,4-D) was developed using polyclonal **antibodies** raised in sheep, immunized with a derivative of 2,4-D (2,4-dichlorophenoxy acetyl-2-succinamyl hydrazine) conjugated to **keyhole limpet hemocyanin**. The mean percentage recovery of 2,4-D from fortified water samples was 104% and ranged from 96 to 120% for fortified orange juice. The sensitivity of the assay without concentration of sample or sample clean-up was 0.2 ng mL⁻¹ for water and 50 ng mL⁻¹ for orange juice. With dichloromethane extraction of 2,4-D from orange juice, 1 ng mL⁻¹ could be detected. 2,4,5-T was the only herbicide investigated which cross-reacted significantly with the 2,4-D antisera. The ELISA also detected 2,4,5-T in water, being sensitive to 0.66 ng mL⁻¹. The ELISA is suitable for direct screening of water and fruit juice samples for 2,4-D contamination.

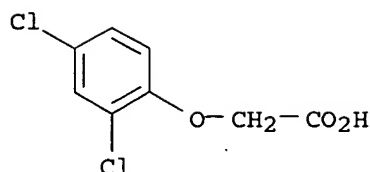
IT 94-75-7, 2,4-Dichlorophenoxy acetic acid, analysis

RL: ANT (Analyte); POL (Pollutant); ANST (Analytical study); OCCU (Occurrence)

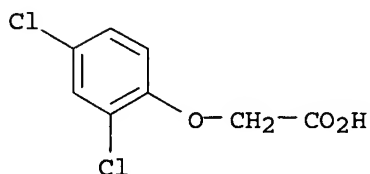
(rapid screening of fruit juices and water supplies for contamination by 2,4-D using an **enzyme immunoassay**)

RN 94-75-7 HCAPLUS

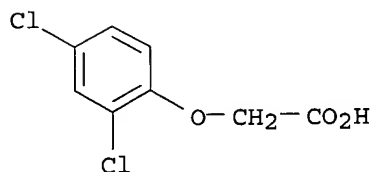
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER (38) OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1994:612436 HCAPLUS
 DOCUMENT NUMBER: 121:212436
 TITLE: Development of **enzyme immunoassays**
 for the detection of phenoxy-carboxylic acid herbicides
 in drinking water and groundwater
 AUTHOR(S): Weber, Wolfgang; Rubach, Klaus
 CORPORATE SOURCE: Inst. Lebensmittelchem., Tech. Univ. Berlin, Berlin,
 D-13355, Germany
 SOURCE: Acta Hydrochimica et Hydrobiologica (1994),
 22(2), 53-9
 CODEN: AHCBAU; ISSN: 0323-4320
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 AB Competitive solid-phase **enzyme immunoassays** with
 polyclonal **antibodies** were developed for the detection of MCPB
 (I), Mecoprop (II), and 2,4-D (III) in drinking and groundwater. Carrier
 protein for the immunization was **bovine serum**
albumin and horseradish peroxidase conjugates were employed as
 enzyme **tracer**. Detection limits and test sensitivities for II
 and III antisera were strongly influenced by pH and ionic strength, as
 much as the use of enzyme **tracers** with lower affinities. The I
 antiserum showed the same specificity in the reaction with 2,4-DB (IV)
 allowing the detection of I and IV down to 0.02 µg/L with a test average of
 0.1 µg/L. The detection limit for the II antiserum was optimized to
 0.02 µg/L. The strongest cross-reactivity was observed for the II Me
 ester. I, IV, and Dichlorprop showed cross-reactivities of 50, 6.7, and
 6.3%, resp. A less sensitive response was observed in the reaction of III
 antiserum with III with a detection limit of 0.4 µg/L. The III
 isooctyl and Me esters showed cross-reactivities of 3630 and 2230% as
 cross-reacting compds. Cross-reactivities of IV, I, and MCPA were 520,
 69, and 41%, resp. All of 100 spiked pos. laboratory samples were correctly
 identified, falsely neg. results were not observed
 IT 94-75-7, 2,4-D, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (**enzyme immunoassays** for detection of
 phenoxy-carboxylic acid herbicides in drinking water and groundwater)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 39 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1994:456084 HCAPLUS
 DOCUMENT NUMBER: 121:56084
 TITLE: Supercritical Fluid Extraction and **Enzyme Immunoassay** for Pesticide Detection in Meat Products
 AUTHOR(S): Nam, Ki-Souk; King, Jerry W.
 CORPORATE SOURCE: National Center for Agricultural Utilization Research, U.S. Department of Agriculture, Peoria, IL, 61604, USA
 SOURCE: Journal of Agricultural and Food Chemistry (1994), 42(7), 1469-74
 CODEN: JAFCAU; ISSN: 0021-8561
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Two techniques, supercrit. fluid extraction (SFE) and **enzyme immunoassay (EIA)**, were integrated into an anal. method for the rapid detection of pesticide residues in meat samples. The pesticides of interest were extracted from meats using supercrit. CO₂. A pumpless SFE system, which was designed in the authors' laboratory, and com. equipment were used in SFE expts. The presence of pesticide residues in the extract was quant. determined using the magnetic bead-based **EIA** kits. Several types of pesticides (alachlor, carbofuran, atrazine, benomyl, and 2,4-D), spiked in the meat samples (bovine liver, ground beef, and lard), were extracted and analyzed. Interferences caused by the coexstd. substances from these complex sample matrixes required the use of a cleanup step prior to the **EIA** test. The described techniques are potentially portable and could be used for the rapid screening of meat samples in plant environments.
 IT 94-75-7, 2,4-D, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, in meat, supercrit. extraction-**EIA**)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)

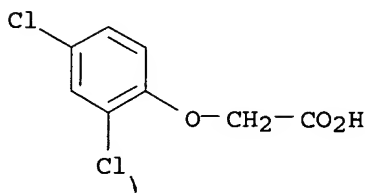


L27 ANSWER 40 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1994:403138 HCAPLUS
 DOCUMENT NUMBER: 121:3138
 TITLE: Using supercritical fluid extraction and **enzyme immunoassays** to determine pesticides in soils.
 AUTHOR(S): Lopez-Avila, Viorica; Charan, Chatan; Beckert, Werner F.
 CORPORATE SOURCE: California Oper., Midwest Res. Inst., CA, USA
 SOURCE: TrAC, Trends in Analytical Chemistry (1994), 13(3), 118-26
 CODEN: TTAEDJ; ISSN: 0165-9936
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The authors used supercrit. fluid extraction (SFE) to extract pesticides from soil

samples. The extraction recoveries were comparable to those achieved with conventional Soxhlet and sonication techniques. For polar and thermally-labile pesticides, SFE combined with **enzyme immunoassays** allowed for faster extraction and anal., fewer sample preparation steps (no need for extract cleanup and concentration), and more sensitive and selective analyses. The authors discuss the use of SFE to extract alachlor, atrazine, captan, carbofuran, metolachlor, and 2,4-D from freshly-spiked topsoil samples containing ≤10% humic acid by weight, and subsequent anal. by **enzyme immunoassays**.

IT 94-75-7, 2,4-d, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, in soil, by **enzyme immunoassay**, supercrit. fluid extraction for)

RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 41 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:403132 HCAPLUS
 DOCUMENT NUMBER: 121:3132
 TITLE: **FIA immunoassays** with electrochemical and optical detection

AUTHOR(S): Cammann, Karl; Warsinke, Axel; Wortberg, Monika; Middendorf, Cornelia; Karst, Uwe; Renneberg, Reinhard
 CORPORATE SOURCE: Inst. fur Chemo- und Biosens. und Lehrstuhl fur Anal. Chem. der, Westfalischen Wilhelms-Universitat, Muenster, D-4400, Germany

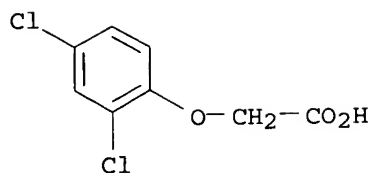
SOURCE: NATO ASI Series, Series E: Applied Sciences (1993), 252(USES OF IMMOBILIZED BIOLOGICAL COMPOUNDS), 415-19
 CODEN: NAESDI; ISSN: 0168-132X

DOCUMENT TYPE: Journal
 LANGUAGE: English

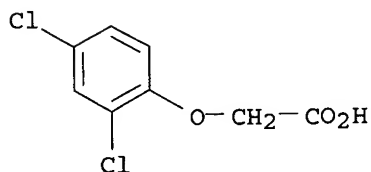
AB Different approaches have been made for developing novel **immuno FIA** (FIIA) systems for herbicide (2,4-D and atrazine) detection: **antigens** have been labeled with ferrocene and enzymes, anti-herbicide **antibodies** were labeled with fluorophores (Europium chelates).

IT 94-75-7, 2,4-D, analysis
 RL: ANST (Analytical study)
 (**FIA immunoassay** of)

RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)

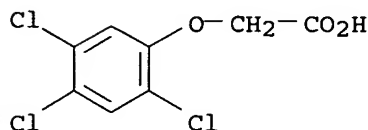


L27 ANSWER (42) OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1994:403128 HCAPLUS
 DOCUMENT NUMBER: 121:3128
 TITLE: Monoclonal Elisa for 2,4-Dichlorophenoxyacetic Acid: Characterization of **Antibodies** and Assay Optimization
 AUTHOR(S): Franek, Milan; Kolar, Vladimir; Granatova, Marta; Nevorankova, Zora
 CORPORATE SOURCE: Veterinary Research Institute, Brno, 621 32, Czech Rep.
 SOURCE: Journal of Agricultural and Food Chemistry (1994), 42(6), 1369-74
 CODEN: JAFCAU; ISSN: 0021-8561
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Twelve monoclonal **antibodies** (MAbs) against the widely used herbicide 2,4-D were produced by hybridomas from two fusions of murine myeloma cells and spleen cells isolated from BALB/c mice immunized with **hapten** conjugated via the carboxyl group to thyroglobulin. To evaluate the sensitivity and selectivity of MAbs, competitive indirect ELISA was used. Mab E2/G2 exhibited the highest sensitivity toward 2,4-D (IC50 = 0.8 ng/mL) and a favorable selectivity toward 18 structurally related substances. Besides the expected high cross-reactivity with Me ester 2,4-D (104.8%), cross-reactivity with MCPA (13.8%) and with 2,4,5-T (9.5%) was found. Cross-reactivity with other structural analogs did not exceed 2.7%. Optimization studies showed that in competitive ELISAs for 2,4-D coating conjugates with **hapten** densities of 2.3 and 3.3 mol of 2,4-D/mol of BSA were more sensitive than conjugates with **hapten** densities of 15.9 and 26.5 mol of 2,4-D/mol of BSA. The best dose-response curves presented in this study were almost linear in the concentration range 0.2-10 ng/mL.
 IT 94-75-7, 2,4-D, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, monoclonal ELISA for)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



IT 93-76-5, 2,4,5-T
 RL: ANST (Analytical study)
 (monoclonal **antibody** to dichlorophenoxyacetate reactivity with)

RN 93-76-5 HCAPLUS
CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



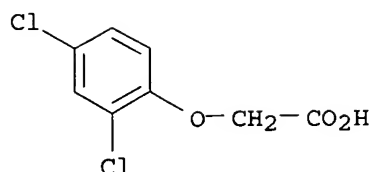
L27 ANSWER 43 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1993:633468 HCAPLUS
DOCUMENT NUMBER: 119:233468
TITLE: **Enzyme immunoassay** based survey of precipitation and surface water for the presence of atrazine, metolachlor and 2,4-D
AUTHOR(S): Hall, J. C.; Van Deynze, T. D.; Struger, J.; Chan, C. H.
CORPORATE SOURCE: Dep. Environ. Biol., Univ. Guelph, Guelph, ON, H1G 2W1, Can.
SOURCE: Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants, and Agricultural Wastes (1993), B28(5), 577-97
CODEN: JPFCD2; ISSN: 0360-1234
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The suitability of **enzyme immunoassay (EIA)** as a method of anal. for 2,4-D, atrazine and metolachlor contamination in water samples was determined by comparing **EIA** results to gas chromatog. (GC) results. The comparison of **EIA** and GC results yielded a correlation coefficient of 0.92, 0.98, and 0.92 for 2,4-D, atrazine, and metolachlor, resp. The **EIA** was used to monitor seasonal trends in the concns. of 2,4-D, atrazine and metolachlor in surface water and precipitation throughout the province of Ontario, Canada. 2,4-D was detected

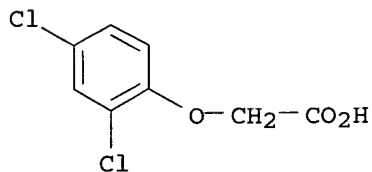
in excess of 4 µg/L in urban creeks during the period of application. Concns. of 43 and 9 µg/L of atrazine and metolachlor, resp., were detected during the field application period in surface water samples from the Kintore Creek watershed. The levels of 2,4-D, atrazine, and metolachlor detected exceeded the Canadian Water Quality Guidelines for the protection of fresh water aquatic life. Concns. as high as 445 and 322 ng/L of atrazine and metolachlor, resp., were detected in precipitation samples collected from 17 locations in Ontario during the herbicide application period. The **EIA** was shown to be qual. and quant. comparable to GC anal.

IT 94-75-7, 2,4-D, biological studies
RL: POL (Pollutant); OCCU (Occurrence)
(pollution by, of surface waters and atmospheric precipitation, **enzyme immunoassay** for monitoring of, in Ontario)

RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 44 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1993:619397 HCAPLUS
 DOCUMENT NUMBER: 119:219397
 TITLE: Preparation of **antibodies** to artificial conjugates containing 2,4-dichlorophenoxyacetic acid
 AUTHOR(S): Kizilshtein, A. L.; Beletskaya, S. G.; Bushkov, A. Ya.
 CORPORATE SOURCE: Rostov. Gos. Univ., Rostov, Russia
 SOURCE: Agrokhimiya (1991), (11), 105-9
 CODEN: AGKYAU; ISSN: 0002-1881
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian
 AB Methods were developed for 2,4-D trace determination in foods and environment by synthesis of covalently bound conjugates and raising rabbit **antibodies** against the conjugates borine and human serum albumin, and high-mol. polymers from Escherichia coli after derivatization of 2,4-D to 5NO₂-2,4-D which was transformed to 5NH₂-2,4-D. Rabbits were immunized against the conjugates using complete Freund adjuvant. The presence of specific **antibodies** and the titer of the antiserum were determined by 2 dimensional radial **immunodiffusion** in agar. Antiserums with a 1:4 titer were raised against 2,4-D conjugates with E.coli polymers and **bovine serum albumin**. The **antibodies** of the immune serums precipitated the 2,4-D conjugates in agar and failed to precipitate the same polymers not conjugated with 2,4-D. Free 2,4-D inhibited the precipitation between the specific **antibodies** and 2,4-D conjugates with **bovine serum albumin**. The results are applicable for the development of kits for **immunochem.** determination of 2,4-D.
 IT 94-75-7, 2,4-D, biological studies
 RL: BIOL (Biological study)
 (antibodies to artificial conjugates containing)
 RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 45 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1989:451782 HCAPLUS
 DOCUMENT NUMBER: 111:51782
 TITLE: **Immunoassays** for the detection of 2,4-D and picloram in river water and urine

AUTHOR(S): Hall, J. Christopher; Deschamps, Raymond J. A.; Krieg, Kim K..

CORPORATE SOURCE: Dep. Environ. Biol., Univ. Guelph, Guelph, ON, N1G 2W1, Can.

SOURCE: Journal of Agricultural and Food Chemistry (1989), 37(4), 981-4
CODEN: JAFCAU; ISSN: 0021-8561

DOCUMENT TYPE: Journal

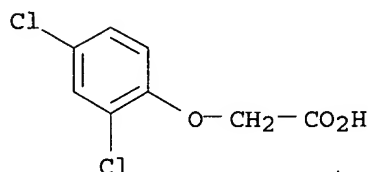
LANGUAGE: English

AB **Immunoassays** for 2,4-D and picloram detection were developed with polyclonal **antibodies** raised in rabbits. Concns. of 2,4-D within the working range 100-10,000 and 50-10,000 ng/mL could be quantitated with an indirect ELISA and a **RIA** in river water and urine, resp. Concns. of picloram within the working range 50-5000 ng/mL also could be quantitated in river water and urine by **RIA**. Detns. using the **immunoassays** required no sample cleanup. Specificities of the antisera for structurally similar herbicides were low compared to 2,4-D or picloram. The **RIA** methods incorporated a novel radiolabel consisting of [3H]glycine covalently linked to the herbicide mol. When compared to the ELISA, the **RIA** was a more simple, efficient, and rapid procedure, requiring fewer steps to complete the assay. The **immunoassays** would be suitable for herbicide quantitation in applicator exposure and environmental fate studies.

IT 94-75-7, 2,4-D, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in human urine and river water by **immunoassay**)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 46 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1987:561218 HCAPLUS

DOCUMENT NUMBER: 107:161218

TITLE: Two **enzyme immunoassays** to screen for 2,4-dichlorophenoxyacetic acid in water

AUTHOR(S): Fleeker, James

CORPORATE SOURCE: Biochem. Dep., North Dakota State Univ., Fargo, ND, 58105, USA

SOURCE: Journal - Association of Official Analytical Chemists (1987), 70(5), 874-8
CODEN: JANCA2; ISSN: 0004-5756

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two solid-phase **enzyme immunoassays** were developed to measure 2,4-D, using 2 sets of structurally distinct **immunogens** and enzyme ligands. The 2,4-D analog, MCPA, gave a similar response with both methods, whereas other phenoxy herbicides cross-reacted differently. In method A, the aromatic moiety of 2,4-D was distal from the carrier protein and labeled enzyme, whereas in method B, the acetic acid portion of the herbicide was distal. The use of both methods to screen for this herbicide in ground water and municipal and river water reduced the number of

false-pos. responses. Water sources having a low background response could be monitored with either method alone. When a concentration step, with disposable C18 extraction columns, was used, the limit of sensitivity was 5 µg/L. Method A was the more sensitive of the 2 methods with a limit of detection of 10 µg/L without the concentration step.

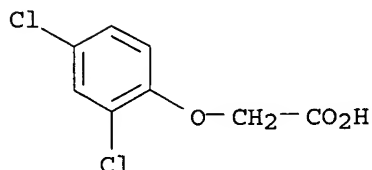
IT 94-75-7, 2,4-D, analysis

RL: ANT (Analyte); ANST (Analytical study)

(determination of, in water, by **enzyme immunoassay**)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 47 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1986:1779 HCAPLUS

DOCUMENT NUMBER: 104:1779

TITLE: **Radioimmunoassay** for 2,4-dichlorophenoxyacetic acid

AUTHOR(S): Knopp, Dietmar; Nuhn, Peter; Dobberkau, Hans Joachim

CORPORATE SOURCE: Dep. Environ. Toxicol., Res. Inst. Hyg. Microbiol.,

Bad Elster, DDR-9933, Ger. Dem. Rep.

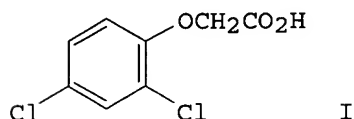
SOURCE: Archives of Toxicology (1985), 58(1), 27-32

CODEN: ARTODN; ISSN: 0340-5761

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB Antisera to 2,4-D (I) [94-75-7] were obtained from rabbits following immunization with various 2,4-D-protein conjugates. Employing [125I] 2,4-D-tyramine as the radioligand for the antisera, very poor assay sensitivity was achieved because of a much higher affinity of the **antibodies** to the **tracer**. When using [6-3H] 2,4-D (specific radioactivity 465 GBq/mmol) a sensitive and specific **RIA** for 2,4-D could be developed, which allows determination directly in water, plasma and urine samples. Levels as low as 100 pg (450 fmol) of 2,4-D can be detected. The antiserum is fairly specific for 2,4-D. Other related phenoxyacetic acids and dichlorophenol showed a cross-reactivity <10%. After a single administration of 2,4-D (0.91 mg/100 g orally) to rats, plasma and urine levels were determined at different times. Results correspond to those found in the literature, thus indicating the utility of the **RIA**. Further applications and limitations are discussed.

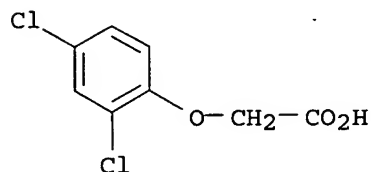
IT 94-75-7, analysis

RL: ANT (Analyte); ANST (Analytical study)

(determination of, in fortified human serum and blood and laboratory animals and water, by RIA)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 48 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1983:535436 HCAPLUS

DOCUMENT NUMBER: 99:135436

TITLE: Studies on the induced nodulation on plants without root nodules - effect of 2,4-D on induced nodulation by Rhizobium on Triticum aestivum

AUTHOR(S): Nie, Yanfu

CORPORATE SOURCE: Shandong Univ., Jinan, Peop. Rep. China

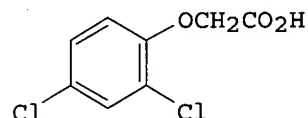
SOURCE: Ziran Zazhi (1983), 6(5), 326-36

CODEN: TJTCD4; ISSN: 0253-9608

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

GI



I

AB Wheat (*T. aestivum*) seedlings cultured on a N-free medium were inoculated with *R. japonicum*, followed by the addition of sterilized 2,4-D (I) [94-75-7] (1 ppm). The culture was kept in a germ-free chamber at 25-30° under sunlight. I induced root nodulation in *T. aestivum*. Microscopic exams., fluorescence immunoassay, agglutination tests, and microbiol. tests confirmed the presence of *R. japonicum* in the root nodules formed. The growth of wheat with I-induced root nodules was superior to that of control wheat (i.e. without treatment with I). When .apprx.1-cm wheat seedlings were kept at ≥5° for >1 mo and then at 20-30° under sunlight (to .apprx.6 cm) prior to inoculation with *R. japonicum* and treatment with I, heading, flowering and seed formation were observed. By contrast, control wheat wilted at the seedling stage.

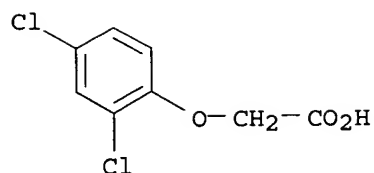
IT 94-75-7, biological studies

RL: BIOL (Biological study)

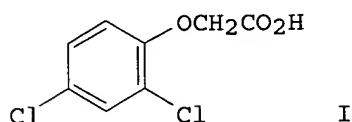
(wheat root nodulation induction by)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



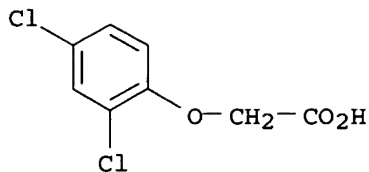
L27 ANSWER 49 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1983:48306 HCAPLUS
 DOCUMENT NUMBER: 98:48306
 TITLE: Allergic hypersensitivity to the herbicide 2,4-D in BALB/c mice
 AUTHOR(S): Cushman, Janette R.; Street, Joseph C.
 CORPORATE SOURCE: Toxicol. Program, Utah State Univ., Logan, UT, 84322, USA
 SOURCE: Journal of Toxicology and Environmental Health (1982), 10(4-5), 729-41
 CODEN: JTEHD6; ISSN: 0098-4108
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



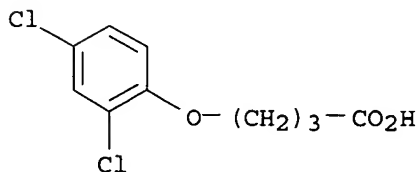
AB 2,4-D (I) [94-75-7]-specific IgE **antibodies** were detected in mouse sera following the 2nd i.p. immunization with 1, 10, or 100 µg I-keyhole limpet hemocyanin conjugate with Al(OH)₃ adjuvant. Specific IgE was determined with the rat passive cutaneous anaphylaxis test using a conjugate of I with **bovine serum albumin** for challenge. The highest **antibody** titers and a measurable response in all mice were seen in the group that received 1 µg of I conjugate. Dinitrophenyl-specific IgE was measured at all intervals examined in mice immunized with a dinitrophenyl-**keyhole limpet hemocyanin** conjugate. I applied epicutaneously on 2 days or over 4 wk failed to elicit delayed-type hypersensitivity as measured by change in ear thickness, incorporation of 5-[125I]iodo-2'-deoxyuridine, or histol. following challenge on the ear. No I specific IgE **antibodies** were detected in serum during the 4-wk sensitization period. Similar treatment with a known sensitizer, dinitrofluorobenzene, produced delayed hypersensitivity. Following 4 wk of dosing, low titers of dinitrophenyl-specific IgE **antibodies** were elicited.

IT 94-75-7, biological studies
 RL: BIOL (Biological study)
 (allergic hypersensitivity to)

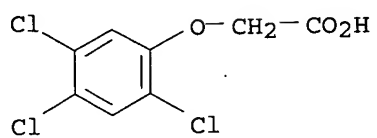
RN 94-75-7 HCAPLUS
 CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



L27 ANSWER 50 OF 50 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1981:401702 HCAPLUS
 DOCUMENT NUMBER: 95:1702
 TITLE: A **radioimmunoassay** to screen for
 2,4-dichlorophenoxyacetic acid and
 2,4,5-trichlorophenoxyacetic acid in surface water
 AUTHOR(S): Rinder, D. F.; Fleeker, J. R.
 CORPORATE SOURCE: Dep. Microbiol., Univ. Alabama, Birmingham, AL, 35294,
 USA
 SOURCE: Bulletin of Environmental Contamination and Toxicology
 (1981), 26(3), 375-80
 CODEN: BECTA6; ISSN: 0007-4861
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Antiserum raised against the **immunogen** 5-NH2-2,4-D for the
radioimmunoassay of 2,4-D (I) [94-75-7], 2,4,5-T [93-76-5], and related compds. was produced in New Zealand rabbits.
 A com. preparation of formalinized, heat-killed, and freeze-dried whole cells
 of Staphylococcus aureus Cowan strain I was used to remove **Igs**
 from solution in the assay procedure. The plant metabolites
 2,4-dichlorophenol [120-83-2], 2,3-dichloro-4-hydroxyphenoxyacetic acid
 [3004-84-0], and 2,5-dichloro-5-hydroxyphenoxyacetic acid [2639-78-3]
 displayed low **immunoreactivity**. The herbicides MCPA [94-74-6],
 2,4-DB [94-82-6], and 2-(2,4,5-trichlorophenoxy)propionic acid
 (silvex) [93-72-1] showed greater **immunoreactivity** than the
 metabolites, but to an extent of <10% of I. 2,4,5-T showed greater
immunoreactivity than I. Recoveries of I from river water, concentrated
 using C18-cartridges, were similar and reproducible over a range of
 0.01-10 µg/10 mL of sample volume. The technique would be useful as a
 screening method for I and 2,4,5-T in surface or groundwater.
 IT 94-82-6
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, by **radioimmunoassay**)
 RN 94-82-6 HCAPLUS
 CN Butanoic acid, 4-(2,4-dichlorophenoxy)- (9CI) (CA INDEX NAME)

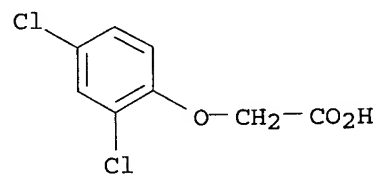


IT 93-76-5 94-75-7, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, in water, by **radioimmunoassay**)
 RN 93-76-5 HCAPLUS
 CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



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